Financial Stability Report

November 2008

Contents

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More recent statistics may be quoted in the text.
This report and supporting data are also available on www.rbnz.govt.nz.

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1 Summary and assessment

The New Zealand financial system has been forced to weather extreme disorder within international financial markets over the past few months. Following a period of relative calm after the rescue of Bear Stearns in March, financial markets became increasingly dysfunctional in September with the failure of Lehman Brothers and ongoing concerns around the viability of several other major US institutions. Risk aversion rose markedly, markets became illiquid and equity prices declined sharply around the globe. A further worsening in investor sentiment gradually forced the merger or restructuring of a range of other sizable financial institutions in the US, UK and Europe.

In response to the market turmoil, central banks and governments around the world have announced a wide range of measures to support their financial systems. These have included the recapitalisation of ailing institutions through various means and the extension of guarantees on financial institutions' retail deposits and other debt instruments. There are some early signs that these measures, which have been of unprecedented scale, are having some beneficial effect on markets. However, confidence remains fragile as markets increasingly confront the prospect of a marked slowing in global economic growth.

New Zealand's banks have not experienced the significant financial losses associated with housing lending that have been at the heart of the global financial meltdown. However, global market conditions continue to affect the cost and accessibility of offshore funding on which the New Zealand banking system relies, highlighting a vulnerability noted in previous *Reports*. Over the past two months, even well-rated financial institutions, such as the Australasian banks, have found it very difficult to borrow in global wholesale markets given the extreme levels of risk aversion among foreign investors. As a result, the availability of credit for New Zealand households and businesses has been tightening.

New Zealand has also adopted a range of policy measures to help reduce the financial and macroeconomic risks that these extraordinary developments create. In October, the Minister of Finance announced the introduction of an opt-in retail deposit guarantee scheme, following the announcement of a comprehensive guarantee in Australia. The scheme gives assurance to New Zealanders that their deposits are safe. The scheme covers all retail deposits of participating New Zealand-registered banks and non-bank deposit-taking entities for a period of two years. In early November, the Minister announced the introduction of a temporary opt-in wholesale guarantee facility, which will cover the wholesale debt of investment-grade New Zealand financial institutions. This facility is aimed mainly at facilitating their re-entry to offshore wholesale debt markets.

These measures are a temporary response to exceptional circumstances. Inevitably, such guarantees create distortions and can disadvantage some borrowers and lenders since they cannot cover all financial contracts and institutions. Both the retail and wholesale guarantee schemes are being structured in a way that attempts to reduce these distortions as much as possible by using risk-based pricing and other features. Regulatory oversight will also need to be very alert to the moral hazard that can arise in the presence of guarantees.

For its part, the Reserve Bank has enhanced its liquidity facilities over the past year and in May expanded the range

of securities acceptable in domestic market operations to include AAA-rated residential mortgage backed securities (RMBS). The banks have been working to construct RMBS and in some cases now hold RMBS that are eligible collateral for Reserve Bank operations. The Reserve Bank has indicated that it will be prepared to lend on a temporary and penal basis against RMBS yet to achieve formal ratings. These facilities provide scope for the Reserve Bank to maintain liquidity in the banking system when banks are unable to access their normal funding channels, which remains a risk even in the presence of guarantees.

Recent international events, including the bailout of institutions on a wide scale, are expected to prompt a widespread review of financial regulation and its appropriate balance with market discipline. These events have also demonstrated the risks faced by financial systems that have a high level of dependency on external financial markets, including those in New Zealand and Australia. Notwithstanding the measures taken to reduce the financial system's exposure to adverse conditions overseas, individual financial institutions have a fundamental responsibility to manage their own balance sheet risks appropriately. The Reserve Bank is currently consulting with the registered banks on proposed new standards for the management of their funding and liquidity. It is expected that this policy, when finalised, will reinforce incentives on the banks to diversify away from short term wholesale funding and thus reduce their vulnerability to market disruptions over the longer haul.

New Zealand's economy has contracted over 2008 following a sustained period of growth. Domestic spending has been affected by the sharp increase in oil and food prices until recently along with a tightening in global credit conditions. In addition, the sharp run-up in house prices and household debt, which had fuelled the expansion and stretched resources, could not be sustained indefinitely. Looking forward, a consolidation of domestic spending and an expected recovery in national savings should help to improve the country's external balance assisted by the recent depreciation in the New Zealand dollar. Exports will, however, be restricted by the weakening in global activity.

With the domestic economy softening, structural weaknesses in some non-bank financial institutions have been revealed over the past year. These have been exacerbated by slowing property markets, resulting in a large number of failures of non-bank deposit takers and a flow of funds away from investments exposed to this sector. With guarantees now in place, the non-banks have the opportunity – which will be reinforced by the new Reserve Bank prudential regime – to consolidate their balance sheets while improving systems and risk management practices.

Collectively, the banks, which represent the bulk of the deposit-taking sector, appear well placed to weather a weaker economy. New Zealand's banks, and the Australian parents of the large Australian-owned banks, have sufficient capital to withstand an increase in loan losses associated with an economic downturn. Moreover, the banks are not directly exposed to many of the negative factors affecting their global peers. The banks appear to have tightened lending standards over the past year. The credit tightening has become more severe recently due to dislocations in the international funding markets, but the recently announced wholesale guarantee scheme should assist in alleviating these pressures.

Prospects for the New Zealand financial system and the broader economy will remain linked to developments in global markets. In essence, the global financial sector is undergoing a prolonged adjustment to the aftermath of a multi-year period of excessive optimism in asset markets, fuelled by lax lending standards in the US and some other regions. Assuming adequate recapitalisation and restructuring of the major distressed global financial institutions, we will eventually reach the point where financial institutions are again able to support global economic growth. In the interim, the adjustment process is proving extremely disruptive and it will likely be some time before financial market conditions normalise.

Alan Bollard, Governor

Box A

Financial Stability Report objectives and Reserve Bank policy actions

Under the Reserve Bank Amendment Act 2008, passed in September, the Bank is formally required to produce *Financial Stability Reports* six-monthly. These documents must report on the soundness and efficiency of the financial system and the activities undertaken by the Bank to achieve its statutory prudential purposes, and must contain information necessary to allow an assessment of these activities.

A key theme throughout this document is the recent volatility in global financial markets, which has had significant implications for the availability of funding and liquidity for New Zealand's financial institutions, and exposes a vulnerability arising from the country's heavy reliance on foreign capital. Chapters 4 and 6 outline some of the policy measures that have been undertaken to reduce the vulnerability of financial institutions and depositors arising from recent global events, including:

- enhancements to the Reserve Bank's liquidity management arrangements;
- the Government's recent introduction of a retail deposit guarantee scheme and a wholesale funding guarantee facility; and
- progress in developing a prudential liquidity and funding policy for the banks.

In addition, chapter 5 describes the functioning of New Zealand's payments systems and notes some proposals to make the governance arrangements of those systems more effective, accountable and transparent for system users, and some enhancements to risk management. Finally, chapter 6 discusses recent amendments to the Reserve Bank Act and the key elements of the Reserve Bank's new regime for the prudential regulation of non-bank deposit takers. It also outlines aspects of the planned prudential framework for the insurance sector.

2 The global economy and financial markets

The international financial system remains under extreme pressure. Until the middle of 2007, an unusual multi-year period of calm and yield appetite in financial markets created an abundant supply of credit, and pushed up the prices of financial and other assets. As credit standards became lax in some markets, this process created new and poorly understood risks, which have been gradually crystallising since.

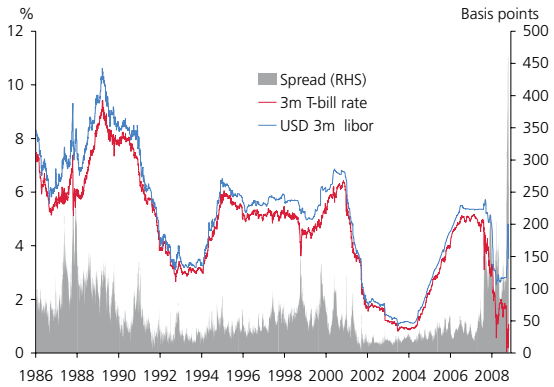
Markets became volatile in the second half of 2007, and although conditions in global financial markets appeared to be improving through the middle of this year, they deteriorated significantly again around September. The bankruptcy of US investment bank Lehman Brothers and widespread concern over the creditworthiness of other financial institutions triggered an intense period of market volatility. The reduced availability of credit in advanced economies is weighing heavily on global growth, which is expected to slow sharply. The weakening global outlook could prolong the current slowdown in New Zealand and presents further challenges for financial stability both internationally and domestically.

Financial institutions have been seeking to strengthen their balance sheets by raising capital, selling assets (where possible), and restricting new lending. This "deleveraging" process takes time, depresses asset prices, and makes credit harder to obtain for households and businesses. Without policy intervention, the deleveraging would have been even more painful and disorderly, but governments have been taking extraordinary policy actions to safeguard the core of their financial systems until the process has been worked through. For now, international policy-makers are seeking to avoid the failure of further systemically important institutions and mitigate the severity of the global credit crunch. In the future, the lessons of the crisis will be reviewed and translated into a new regulatory agenda for the financial industry.

2.1 Global financial markets and institutions

Financial markets have been very volatile since the middle of 2007, and exceptionally so over the past two months. Risk premia increased sharply in mid-September following the collapse of US investment bank Lehman Brothers, as investors became increasingly uncertain about the solvency of other major financial institutions. Concern over counterparty risk prompted a generalised flight-to-safety and liquidity hoarding as banks became increasingly reluctant to lend to each other for terms longer than overnight or one week. Liquidity in benchmark 90-day money markets diminished rapidly and spreads relative to yields on government debt widened substantially, particularly in US dollar markets (figure 2.1), despite unprecedented liquidity provision by

Figure 2.1
"TED spread"
(spread between US inter-bank rate and Treasury bill rate)



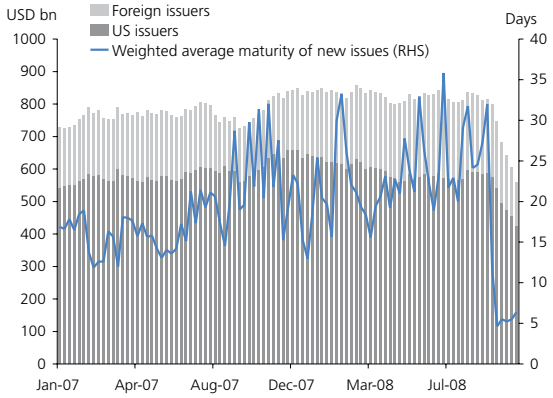
Source: Bloomberg.

central banks (box B). Other key bank funding markets were also severely affected, with the stock of US commercial paper outstanding contracting rapidly, partly as US money market mutual funds withdrew from the market due to substantial investor withdrawals (figure 2.2). The commercial paper market, which is a key source of funds for many institutions (including the Australasian banks) essentially became frozen over this period, with new issuance concentrated in short maturities.

Figure 2.2

Stock of US commercial paper outstanding and weighted average maturity of new issuance

(financial issuers only)



Source: Federal Reserve and RBNZ calculations.
Note: Weekly data, not seasonally-adjusted. Weighted-average maturity is estimated using daily issuance data for AA-rated financials.

Although most severe in US dollar markets, heightened liquidity pressures quickly spread to other international money markets, including in Australasia. Spreads between 90-day inter-bank interest rates and expected policy rates widened to record highs in all major markets, placing upward pressure on funding costs for financial institutions across the world.

Exposure to securitised assets linked to the US residential mortgage market continues to threaten the capital position of many global financial institutions. Previous *Reports* have described how rising delinquency rates triggered steep declines in the value of these assets from July 2007 onward. Reported mark-to-market losses had increased to more than USD 680 billion by the end of October this year, with most concentrated in a relatively small number of large banks based in the US and Europe (table 2.1). With funding costs also rising, balance sheets have been severely stretched. A substantial amount of fresh equity capital has been raised, initially from private investors and more recently with government support. Nevertheless, with further losses likely, and some global calls for banks to boost capital ratios, the strengthening of balance sheets is likely to be protracted and involve further government support in some cases.[1]

Table 2.1

Major financial institutions' reported losses and capital injections

(USD billion, as at end October)

Region/institution	Reported loss	Capital injection
Americas	**430.7**	**359.9**
of which:		
Bank of America	27.4	55.7
Citigroup	68.1	74.0
Goldman Sachs	4.9	20.5
JP Morgan	20.5	44.7
Lehman Brothers	13.8	13.9
Merrill Lynch	58.1	29.9
Morgan Stanley	15.7	24.9
Wachovia	96.5	11.0
Washington Mutual	45.6	12.1
Wells Fargo	17.7	30.8
Europe	**226.7**	**304.1**
of which:		
Barclays	7.0	31.4
Credit Suisse	14.0	11.9
Deutsche Bank	9.3	5.8
Fortis	8.5	20.8
Halifax-Bank of Scotland	6.1	25.4
HSBC	27.4	5.0
ING	8.1	17.3
Royal Bank of Scotland	12.8	53.7
UBS	44.2	32.4
Asia	**27.3**	**32.7**
Global total	**684.7**	**696.7**

Source: Bloomberg.
Note: Capital injection data include recent bank recapitalisation plans by the US and European governments.

[1] **The October edition of the IMF *Global Financial Stability Report* discusses financial sector deleveraging in greater depth, linking the process to efforts by global banks to diversify their funding, dispose of non-core assets, and reduce (or hedge) risky asset holdings, as well as raising new equity capital.**

Box B

Global policy measures

The policy response to the financial crisis has evolved over the past year. During the initial period of uncertainty, authorities focused on providing liquidity to financial market participants while the severity of losses for the financial system became clearer. More recently, as it has become evident that a range of institutions have incurred substantial losses, governments have provided capital and taken other actions to stabilise weak institutions. The interdependent nature of the global financial system has also enhanced calls for an increasingly multilateral approach.

Key policy responses include the following:

Liquidity measures: Providing adequate liquidity to the financial system has been the cornerstone of the policy response from monetary authorities since the inception of the crisis last year. Over time direct access to central bank credit has been progressively extended to a wider array of financial institutions, and a wider range of securities have been accepted in exchange for this liquidity, such as mortgage backed securities and commercial paper. More recently, a number of central banks (including the Reserve Bank of New Zealand) have been cooperating with the Federal Reserve in creating "swap lines" to ensure they can provide US dollars to their financial sector as required. The IMF has also recently added an additional lending facility to alleviate short-term liquidity pressures stemming from the crisis.

Monetary policy: Interest rate cuts have been used to stimulate the demand for credit on the part of households and firms and therefore to underpin economic activity. These rate cuts have been substantial, and at times coordinated across central banks (such as the 50 basis point cut involving the Federal Reserve, European Central Bank, and a number of other institutions in early October).

Recapitalisation of financial institutions: The accumulation of financial losses and the resulting threat to a number of systemically important financial institutions has prompted efforts to strengthen the balance sheets of these troubled institutions. This has involved a combination of capital provision, outright or partial nationalisation, or brokering mergers between institutions. A notable example was the conservatorship of the US mortgage market agencies Fannie Mae and Freddie Mac. Banks have also been recapitalised (sometimes with international coordination) in Europe. More recently, some governments (including in the US and UK) have shifted from recapitalising specific troubled institutions to providing (or offering) capital to all large institutions.

Market making of last resort: In the aftermath of a lending boom, there may be little or no demand to hold certain sorts of risky assets. The public sector may act to purchase tranches of these assets to stop them coming onto the open market and further depressing prices. This was the rationale behind the US Resolution Trust Corporation in the 1990s, which held a range of commercial property assets till markets stabilised. The US Troubled Asset Relief Programme (TARP) is likely to involve purchasing a range of mortgage securities and similar assets, and several other countries are looking at similar measures. The Federal Reserve has also begun to purchase corporate commercial paper to help support that market.

Guarantee of financial system liabilities: Most countries had an existing retail guarantee scheme, and in many cases these have been extended (the introduction of guarantees in New Zealand and Australia is discussed in chapter 6). Many countries have also announced schemes to temporarily guarantee wholesale or inter-bank debt. The wholesale guarantees are generally being provided on a case-by-case basis, and at a more substantial fee, while the more limited retail guarantees generally apply automatically to qualifying deposits.

Support for countries experiencing capital flight: The IMF has entered into lending arrangements with a number of countries being adversely affected by global risk aversion and the associated outflow of short term capital. The IMF has more than USD 200 billion to lend to member countries experiencing short term financial distress and balance of payments difficulties, and has the capacity to borrow additional funds if required.

Other measures: A number of other measures have been undertaken, such as bans on short-selling of equities. There has been some concern that short selling could

create a self-fulfilling prophecy, destroying market confidence in an institution by depressing its stock price. In a number of emerging markets, stock markets have even been closed for significant periods.

Together, these extraordinary actions appear to have restored a degree of stability to the financial system. Although markets remain highly volatile, there are some welcome signs that inter-bank lending markets are becoming slightly more functional, though still nowhere near 'normal' conditions.

Longer term, an important challenge for policymakers will be to devise suitable 'exit' strategies from the current level of official support for the banking sector. Liquidity provision from central banks will need to be reduced, government equity stakes sold or repaid, and guarantee schemes ended or modified. Some international coordination, to remove distortionary cross-border effects of policies, will be necessary and welcome. There is also impetus to review international financial regulation, including arrangements for supervising banks that are active in multiple countries. A G-20 summit to discuss these matters has been scheduled for mid-November.

The impact of declining asset values and rising funding costs has been particularly severe for the major US investment banks. A key tenet of these institutions' business models was heavy reliance on short-term (often overnight) wholesale funding. Leverage ratios were also very high, with debt financing a large proportion of the balance sheet, entailing a significant vulnerability to deteriorating asset quality. These factors contributed to the failure of Lehman Brothers and the distressed sale of Bear Stearns earlier in the year, and encouraged action by other institutions to avoid a similar fate.[2]

Several other prominent US financial institutions have been similarly affected by heavy losses stemming from the residential mortgage market and recent illiquidity in global funding markets. In early September, for example, the US Federal Housing Finance Agency (FHFA) determined that mortgage securitisation agencies Fannie Mae and Freddie Mac had breached regulatory requirements and needed to be placed under full government control, a move that briefly supported market sentiment prior to the collapse of Lehman Brothers. The US authorities have also been proactive in facilitating the transfer of retail deposits and some assets from distressed commercial banks such as Wachovia and Washington Mutual to stronger and more diversified institutions. Moreover, the Federal Reserve moved swiftly to extend liquidity support to American Insurance Group (AIG) in mid-September, motivated in large part by concern about the possible adverse impact on the credit default swap market if AIG had been forced to file for bankruptcy.

European banks have also encountered severe balance sheet distress over recent weeks, especially as conditions in funding markets have deteriorated. The prospect of rising credit losses on mortgage portfolios, notably in the UK and Ireland, has also played a role. Equity prices have fallen steeply, and a number of institutions have been fully or partially nationalised, while others have been forced to seek merger partners.

The ongoing market disruption has had a particularly pervasive effect on the Icelandic economy, as the domestic currency (the krona) fell steeply and international capital flowed out of the country. In response, Iceland and the IMF have agreed to a two-year USD 2.1 billion loan to restore confidence in the banking sector and to stabilise the krona. As discussed in section 2.2, there has been pressure on a growing number of emerging markets, several of which have also approached the IMF for emergency loans.

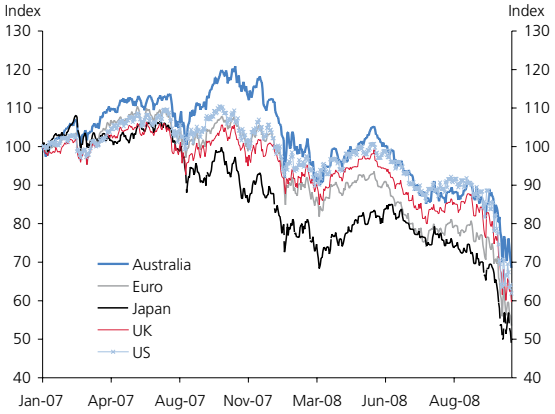
Intense financial sector distress and increasing concerns about the impact on the world economy have weighed heavily on asset markets. Equity prices have fallen steeply, with the major international markets falling by at least 20 percent since the start of September (figure 2.3). Equity markets in some developing economies experienced even

[2] **Merrill Lynch agreed to merge with Bank of America, while Morgan Stanley and Goldman Sachs obtained official approval to convert to regulated, universal bank status, allowing access to retail deposits and application of more favourable accounting rules for tradable assets.**

Figure 2.3

Equity market indices

(indices normalised to 100 on 1 January 2007)



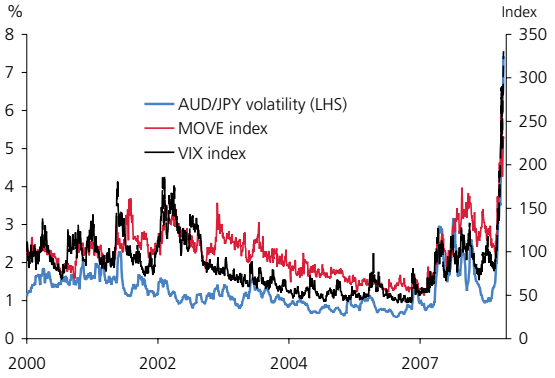
Source: Bloomberg.

larger declines. Credit spreads have also widened sharply, while increased risk aversion has prompted a general appreciation of 'safe-haven' currencies, such as the US dollar and Japanese yen. Higher yielding currencies, including the Australian and New Zealand dollars, have fallen sharply as investors withdraw from carry trades. Illiquid trading conditions and a general climate of uncertainty over the economic and financial outlook have also contributed to extreme volatility across a range of markets, including currency markets (figure 2.4). Diminished risk appetite has promoted substantial flows into risk-free assets, driving the yield on 3-month US Treasury Bills to nearly zero, the lowest level in more than 40 years.

Figure 2.4

Measures of expectations of asset price volatility

(indices normalised to 100 on 1 January 2007)



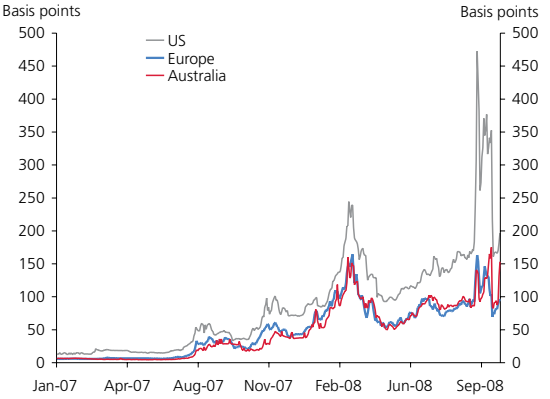
Source: Bloomberg.

Note: AUD/JPY volatility is measured as a 20-day moving average of intraday range as a percentage of closing price. VIX is a measure of US equity price volatility and MOVE is a bond price volatility index.

The ongoing market volatility has elicited a series of policy responses in the US and around the world (box B). A number of the measures proposed and/or implemented are unprecedented in scale and scope. International policymakers have committed to act as necessary to keep the key elements of the financial system operating effectively. However, this does not mean that all institutions will receive all the assistance they would like, and more will probably be wound down or merged into other entities. These strains are visible in credit default swaps on major financial institutions (figure 2.5). There is likely to be a period of heightened uncertainty, and reduced willingness to lend money for any length of time in inter-bank markets, until it becomes clearer which institutions are unable to restructure and move forward. This process could prove protracted, although the prompt response of global authorities means that resolution may be quicker than would otherwise be the case, and there were some promising signs of some improvement in market conditions in late October.

Figure 2.5

Bank credit default swap spreads



Source: Bloomberg, Reserve Bank calculations.

Note: Median 5-year spreads across a sample of 9 US, 18 European and 5 Australian banks.

2.2 World economic outlook

Ongoing financial market disruption is expected to weigh heavily on the world economy over coming quarters. The latest IMF forecasts envisage the advanced economies recording negative growth in 2009, with global growth expected to slow from its average of about 5 percent in recent years to a more moderate 2.2 percent in 2009. These

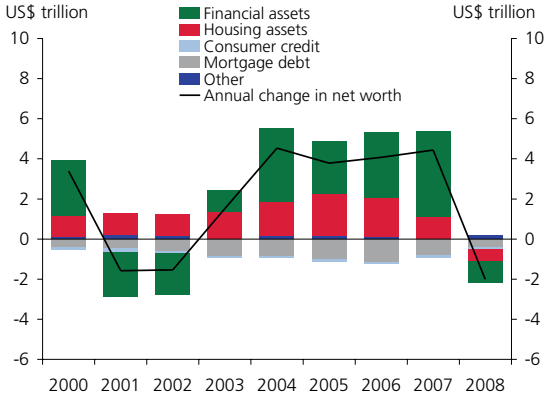
forecasts have been heavily downgraded in recent weeks, but the risks are still slanted to the downside. A more severe and prolonged international downturn cannot be ruled out, despite aggressive policy action in the US and elsewhere, including coordinated interest rates cuts and fiscal stimulus packages.

Despite surprisingly strong growth through the middle of 2008, the United States economy is showing clear signs of weakening. Recent US dollar appreciation is likely to constrain net exports, a key source of growth over recent quarters. Residential property prices have continued to fall sharply, weighing heavily on residential investment, while household wealth has also been eroded by heavy losses in equity markets (figure 2.6). Recent declines in fuel prices have relieved some of the pressure on household budgets, but unemployment continues to rise sharply and credit conditions have tightened as financial institutions seek to repair balance sheets weakened by losses on residential mortgages (figure 2.7). Corporate lending criteria have also become more restrictive, with the impact on business investment likely to be exacerbated by recent disruptions in the commercial paper market. The net result has been a sharp slowing in credit growth, including an outright contraction in nominal consumer credit in August.

Similar forces are evident in Europe. Domestic spending has been constrained by sharply tighter credit conditions and the accumulated effect of strong gains in food and energy prices. Housing markets are also under significant pressure in several countries, including the UK, Ireland and Spain. Slower trading partner growth is also likely to weigh on future export demand.

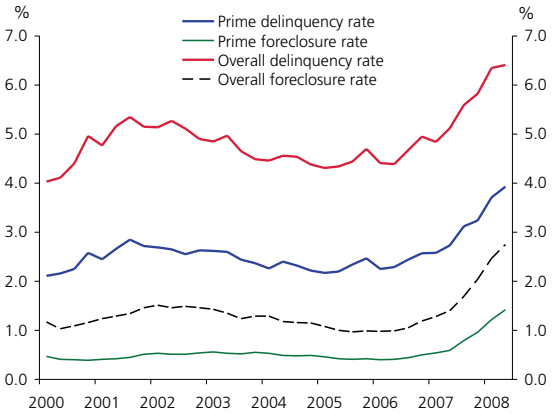
The cost and availability of credit to US and European households and businesses had become significantly more restrictive even before the recent deterioration in financial market conditions (figure 2.8). Although data are sparse, it is likely that higher-risk borrowers are having difficulty refinancing on affordable terms, which will ultimately lead to

Figure 2.6
Change in US household net worth



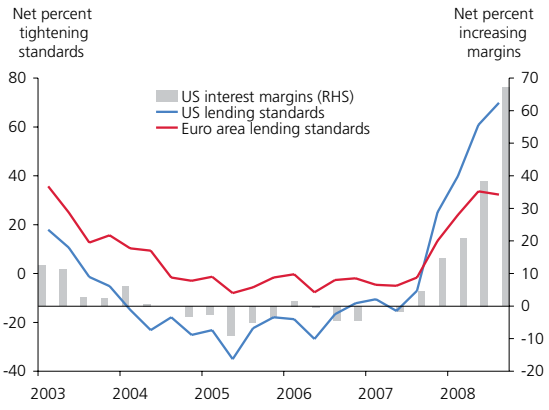
Source: US Federal Reserve and Reserve Bank calculations.
Note: Data cover households and non-profit organisations. June years.

Figure 2.7
Delinquency and foreclosure rates on US residential mortgages
(percent of total loans outstanding)



Source: Mortgage Bankers Association/Bloomberg.
Note: Delinquency rates seasonally adjusted. A mortgage is classified delinquent if payment is more than 30 days overdue.

Figure 2.8
Credit conditions in the US and Euro area
(survey measures)



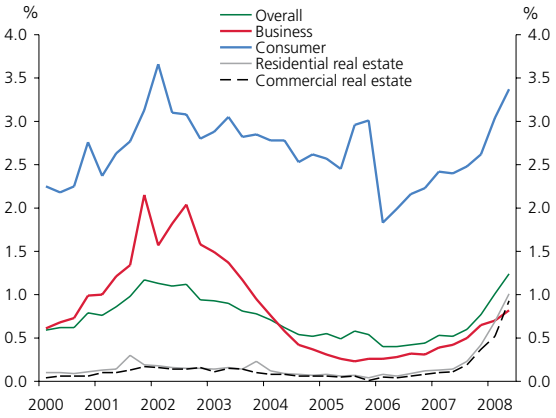
Source: Federal Reserve, European Central Bank and RBNZ calculations.
Note: Average lending standards across mortgage, consumer and corporate lending. Interest margins for US corporate borrowers only.

a further deterioration in credit quality. In the United States, for example, losses on consumer loans and commercial real estate exposures have started to rise and seem likely to climb further (figure 2.9), while corporate defaults are also expected to increase.[3]

Credit losses are also expected to increase in Europe as economic growth slows and access to credit remains restricted. Although less severe than in the United States, ongoing housing market corrections in the UK, Spain and Ireland are likely to entail rising mortgage delinquencies in these markets (figure 2.10). Furthermore, the European banking system is heavily exposed to a number of potentially vulnerable developing economies in the Central and Eastern Europe (CEEC) region and central Asia.

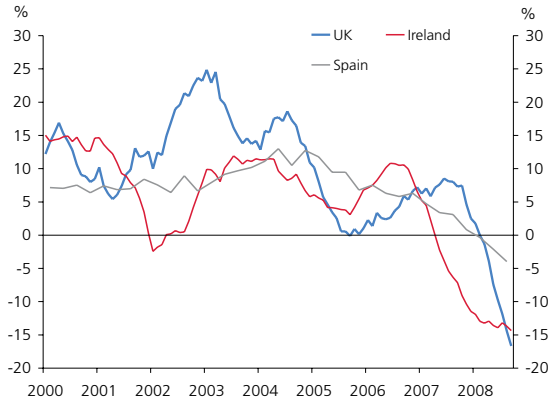
A significant downside risk facing the US and European economies is the possibility of financial sector distress and weak macroeconomic performance becoming mutually reinforcing. Access to credit could become severely constrained, even for fundamentally creditworthy borrowers, weighing on economic activity and ultimately leading to a renewed rise in loan impairments. This would see growth slow more sharply than currently envisaged, resulting in a sharper and more prolonged international downturn.

Figure 2.9
US commercial banks' charge-off rates, by loan type
(percent of total loans outstanding, annualised)



Source: Federal Reserve.

Figure 2.10
Real house prices in selected European countries
(annual percent change)



Source: Datastream, RBNZ calculations.

[3] For example, Moody's latest forecasts envisage default rates on US high-yield corporate debt rising from less than 3 percent currently to around 8 percent by the end of 2009.

The Asia Pacific region

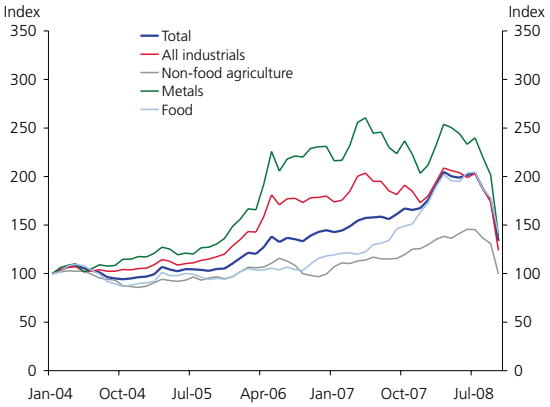
Weakness in global credit and commodity markets has contributed to a significant weakening in the Australian economic outlook over the past six months. Retail sector activity is under pressure and the housing market in Sydney and Melbourne has softened. Households are facing rising costs and declining wealth (driven by the weak equity market as well as the softening housing market). While the resource sector still has some strength, the outlook has been attenuated by recent declines in global commodity prices. Outside the resource sector, business sentiment appears to have weakened more significantly. While the Australian dollar has fallen very sharply in recent months, the impact on exporters will be mitigated by the weak economic outlook in many of Australia's trading partners.

The major Australian banks are facing pressures in international funding markets that are raising the cost of borrowing. The funding pressures and risk aversion more generally have caused distress in asset prices (for example, some listed companies holding commercial property assets have declined sharply in value, and some bankruptcies have occurred in the construction sector.) The Reserve Bank of Australia began to rapidly ease monetary policy in September, cutting interest rates by 200 basis points in total by early November.

Slower growth in the US and Europe has weakened export demand for a number of Asian countries, suggesting

that domestic spending will need to become a more important source of growth in the period ahead. Sharply higher food prices over the past year have eroded disposable incomes in large parts of emerging Asia, but inflationary pressures are expected to ease as activity weakens and international commodity prices fall from recent highs (figure 2.11). Having progressively tightened monetary policy over the past three years, the Chinese authorities have recently been able to cut interest rates and increase fiscal spending, which should help to support economic activity throughout the region. Nevertheless, a slowdown in Chinese growth seems well under way, with annual growth falling to 9 percent in the third quarter, attenuating a key source of growth in the world economy.

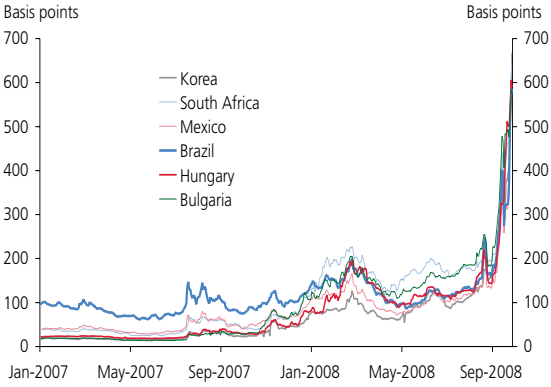
Figure 2.11
International commodity prices



Source: *The Economist*.
Note: **US dollar index, re-based with January 2004 = 100. Monthly averages of weekly data to September 2008; latest available for October 2008.**

In addition to slower export growth to advanced economies and lower commodity prices, emerging markets are also being affected by global deleveraging. Developments in Iceland have demonstrated the potential for the crisis to cause disruptive capital flight from economies. The sharp decline in international risk appetite over recent weeks has prompted substantial liquidation of emerging market investments, precipitating steep declines in equity markets and rapid exchange rate depreciation. Brazil, Russia and South Korea have been severely affected, although these countries have substantial foreign exchange reserves. More broadly, sovereign spreads have widened considerably, indicating increased perceptions of default risk across many emerging markets (figure 2.12). Countries that depend heavily on external capital to finance large current account deficits, particularly those with unhedged foreign currency debt, appear especially vulnerable to continuing disruption in international financial markets. These include several economies in Central and Eastern Europe, such as Hungary and the Baltic countries which have relied heavily on inter-bank lending to support high domestic credit growth. To date, Hungary and the Ukraine have agreed emergency loan deals with the IMF (as has Iceland), while several other countries, such as Belarus and Pakistan, have announced they are in active discussion with the IMF.

Figure 2.12
Emerging market sovereign spreads



Source: **Bloomberg.**
Note: **Spreads on 5-year USD credit default swaps.**

3 New Zealand's economy and financial markets

The contraction of the New Zealand economy over the first half of this year has brought to a close one of the longest uninterrupted periods of economic growth in New Zealand's post-war history. Over the past 10 years, unemployment has dropped to levels not seen since the early 1980s, and with the capital gains afforded by house price increases boosting wealth, households have enjoyed high levels of consumption and comfortably serviced rising debt burdens. The favourable economic conditions also boosted business profitability and firms' balance sheets, prompting robust investment growth and low corporate default rates.

However, in many respects the economic expansion was unsustainable. Households have accumulated significant debt to finance both investment in housing and ongoing consumption. With house prices now falling and financial wealth being eroded by domestic and global financial market developments, household balance sheets are under evident strain and debt-servicing capacity is being stretched. The slowdown is also having an effect across much of the commercial sector and some businesses are likely to encounter increasing financial pressures while activity remains subdued.

Financial markets have moved to reflect the weaker growth outlook and lower Official Cash Rate (OCR), and have also been very volatile, largely because of the extraordinary events in international markets discussed in chapter 2. That financial volatility creates uncertainty, and is likely to lead to cautious spending and investment decisions in the near-term. While policymakers are acting to mitigate the impact of international turmoil on credit supply, credit conditions are tightening and reinforcing the slowdown in spending.

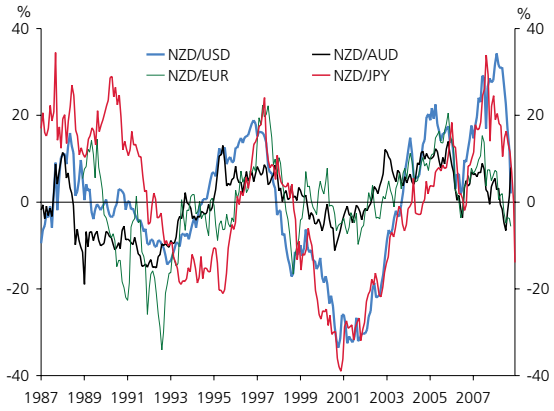
3.1 Financial markets

The extraordinary volatility in global financial markets discussed in chapter 2 has also affected New Zealand's financial markets, some of which have suffered episodes of illiquidity and substantial price movements. The NZD/USD exchange rate, for example, has at times moved very rapidly on very limited volumes – a pattern also evident in other currencies. More broadly, increased risk aversion and investors' repatriation of funds towards safe haven assets has underpinned strong gains in the US dollar (USD) and Japanese yen since September, while at the same time placing downward pressure on higher-yielding currencies such as the New Zealand dollar (figure 3.1). On a trade-weighted (TWI) basis, the NZD has fallen by about 15 percent since our May *Report*, losing value against all the major currencies except the Australian dollar. Market liquidity has generally

Figure 3.1

NZD against key currencies

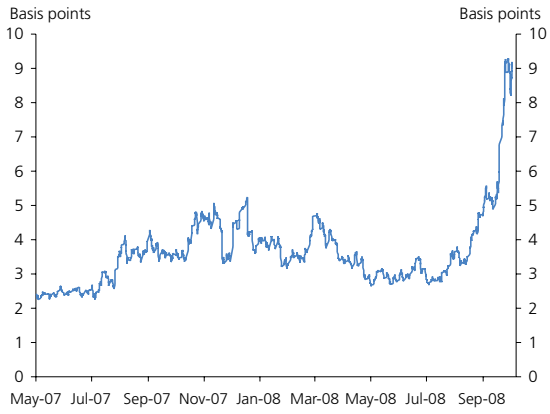
(percentage deviation from period average)



Source: Bloomberg and RBNZ calculations.

Figure 3.2

NZD/USD bid-ask spread



Source: Reuters.

been poor, with average bid-ask spreads widening sharply (figure 3.2) and average daily turnover relatively low.

The fall in the NZD TWI has been partially underpinned by a narrowing of New Zealand interest rate differentials. A total of 175 basis points in Official Cash Rate (OCR) reductions since July, and a move in interest rate markets to price in further reductions in the OCR, have seen longer term New Zealand yields fall relative to other countries.

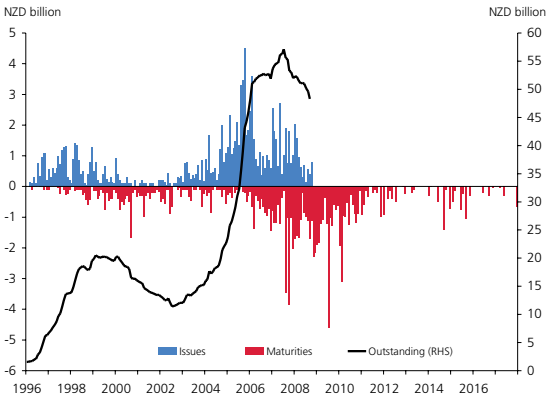
The New Zealand dollar has been supported in recent years by retail investments in NZD assets (for example, purchases of Eurokiwi and Uridashi instruments, which are offshore issued bonds denominated in NZD).[1] There have also been speculative positions taken over recent years in the NZD using retail derivative exchanges, particularly in Japan, that have supported the NZD. In the current environment, these flows appear to have been reduced quite sharply. For example, data from the Tokyo Financial Exchange shows margin traders have pared back net long NZD positions dramatically (by around 85 percent) after steadily building long positions until August. Total outstanding issuance of Eurokiwi and Uridashi securities has continued to decline recently, as issuance has generally not matched maturities (figure 3.3). The decline in these securities and the futures positions reflect general risk aversion, as well as the losses that some investors have likely taken as the result of the NZD falling against currencies like the yen, and expectations of lower New Zealand interest rates.

[1] **For further reference see Drage D, A Munro and C Sleeman (2005) 'An update on Eurokiwi and Uridashi bonds', Reserve Bank of New Zealand *Bulletin*, 68 (3).**

Figure 3.3

Offshore NZD denominated bond issuance

(Eurokiwi and Uridashi bonds)

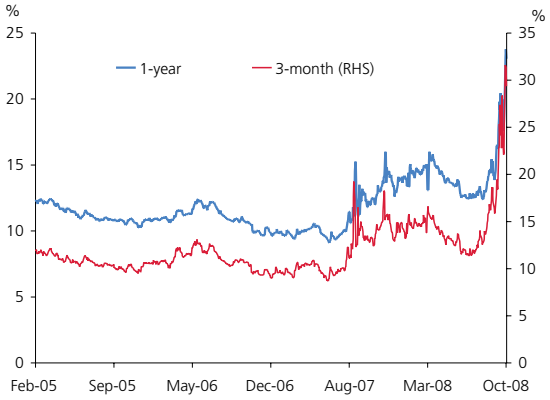


Source: Bloomberg, Reuters and RBNZ calculations.

The institutional 'carry trade', which involves borrowing in a low yielding currency (such as the Japanese yen or Swiss franc) and investing in assets denominated in a high yielding currency (such as the New Zealand or Australian dollars) to profit from the interest rate differential between the two countries, has also become less attractive as exchange rate volatility has risen (figure 3.4) and interest differentials have narrowed.

Figure 3.4

NZD/USD implied volatility



Source: Bloomberg.

These developments have contributed to the continuation of relatively low levels of liquidity in the NZD foreign exchange market by reducing the demand to hold NZD assets. More recently, demand to swap foreign currency liabilities for New Zealand dollar funding has decreased, since funding in foreign currency has been very hard for financial institutions to obtain. This has caused particularly restricted

liquidity conditions in FX forward markets, which were also affected by rising concerns over counterparty risk.

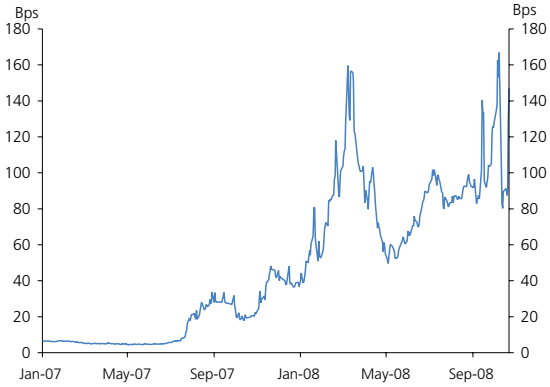
Implied volatilities from NZD/USD option prices provide a measure of expected currency market volatility. These measures spiked higher during recent market events in September. Market uncertainty around the outlook for the currency appears to have increased at both the short term (3 month) and longer term (1 year) horizons.

New Zealand wholesale interest rates, measured by swap rates, have fallen sharply at all maturities since the previous *Report*, reflecting actual and expected further reductions in the Official Cash Rate (OCR). However, financial institutions are having to pay a significant and growing margin over swap rates to secure funding, so the fall in swap rates has not been fully reflected in lower funding costs. The widening in funding spreads reflects increased global concerns about credit risk, and also a general lack of liquidity in wholesale money markets.

An indication of the rise in risk premia is in the spreads charged on credit default swaps (CDS) on debt issued by the Australasian banks. CDS spreads rose steadily after our previous *Report* in May, reaching peaks near the levels seen in March 2008 (around the time of the Bear Stearns purchase by JP Morgan) before the announcement of deposit guarantee schemes in Australia and around the world caused credit concerns to abate somewhat in October.

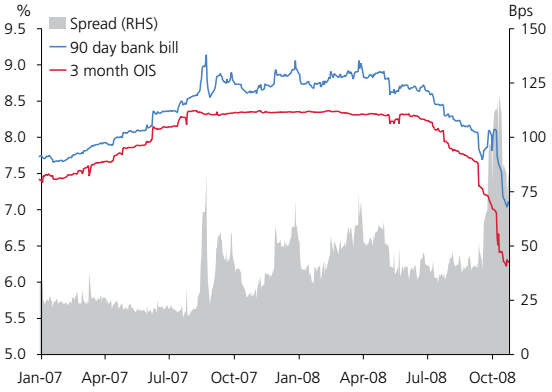
Market frictions also persist in short-term money markets. The spread between bank bill rates and Overnight Indexed Swap (OIS) rates reached very high levels in September as New Zealand banks found overseas funding (for example, in the US commercial paper market) very difficult to obtain. Banks attempted to switch to domestic funding, but the pool of domestic funding is relatively inelastic, so spreads widened. Spreads have narrowed more recently, in line with global developments, but remain elevated.

Figure 3.5
Average CDS spread on Australasian banks



Source: Bloomberg.
Note: Unweighted average of 5-year senior CDS spreads for ANZ, National Australia Bank, Westpac and Commonwealth Bank of Australia.

Figure 3.6
Spread between 90-day bank bill rate and 3-month overnight index swap (OIS) rate



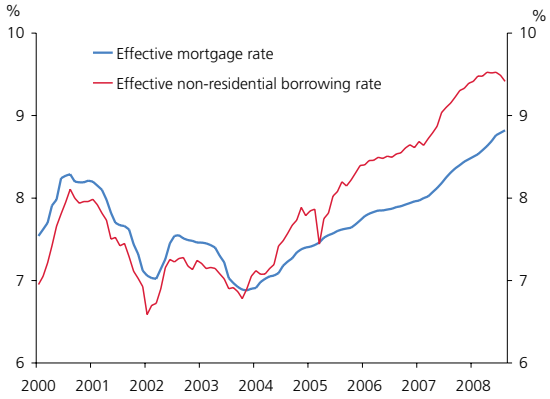
Source: Bloomberg.

3.2 Domestic environment

The past six months have confirmed that the New Zealand economy is in recession and facing a period of slow growth after the long expansion of recent years. Despite recent reductions in the OCR and expectations of further declines, the average cost of credit for both households and businesses has continued to rise. Although home loan rates have recently fallen for new borrowers, existing housing loans have continued to re-price upwards from the lower fixed rates at which they were taken out in recent years. The spread between bank lending rates and the OCR has also widened due to the financial turbulence discussed earlier. The terms under which credit is offered are believed to be tightening, reflecting the increased difficulty for banks have faced in accessing funding from offshore markets, as well as their response to the macroeconomic

Figure 3.7

Effective lending rates



Source: RBNZ.

Note: The effective non-residential borrowing rate is estimated residually, given the effective residential mortgage rate, and data on average bank lending rates overall.

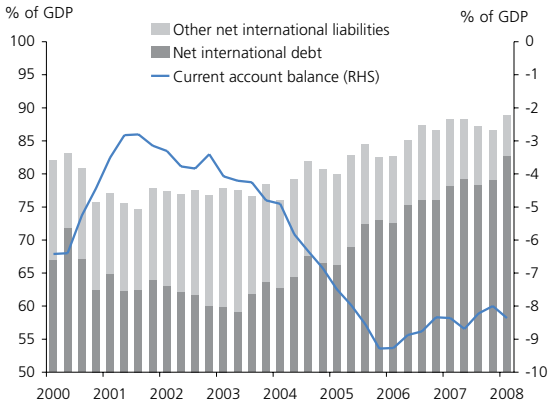
slowdown. At the same time, the demand for credit may be easing as households and firms reduce their spending plans in a difficult economic environment. Growth in credit aggregates has slowed markedly over the past year, with much of that slowdown reflecting lower growth in lending to households.

The aggregate balance of New Zealand's savings and investment decisions – the current account deficit (CAD) – is expected to fall over the next two years as households pare back their consumption and firms reduce investment. The deficit has already fallen from a peak of 9.3 percent of GDP in early 2006, to 8.4 percent as at Q2 2008 (figure 3.8). Lower

Figure 3.8

New Zealand's external position

(percent of GDP)



Source: Statistics New Zealand.

Note: Other net international liabilities include foreign direct investment and holdings of equity securities.

deficits will help stabilise the net international investment position (NIIP) – the balance between the country's foreign assets and liabilities – which has edged up to around 89 percent of GDP in recent times.

New Zealand's net foreign liability position is large by historical standards and implies continued reliance on foreign capital. In the context of global credit market disruptions and heightened risk aversion on the part of international investors, the stability of capital flows cannot be taken for granted. Because New Zealand's capital inflows are largely intermediated through the banking system, the pressures of a reduction in capital inflows would be felt most immediately in the banking sector (see chapter 4). On the other hand, New Zealand is fortunate that its systemically important banks do not have large international asset positions subject to potentially large revaluations, and its international borrowing is largely in NZD or hedged back into NZD. Large gross foreign liability positions (especially in foreign currency) would create additional risks.

The accumulation of fiscal surpluses during New Zealand's economic expansion has pushed net Crown debt below zero, and thus created headroom for fiscal stimulus to stabilise the economy throughout the downturn. Fiscal policy has become relatively stimulatory recently, with spending growth and recent tax cuts, and this is expected to continue over the next few years (see figure A10 in the appendix). Fiscal stimulus will help to smooth the balance sheet consolidation in the household and corporate sector, but will slow the narrowing in the CAD somewhat.

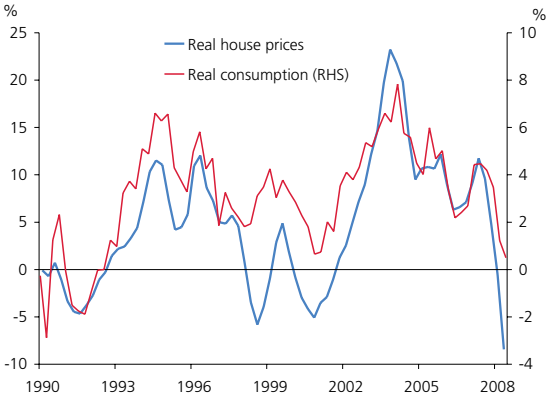
Developments in the household sector

Current economic conditions are challenging for households. Real disposable income growth has been eroded by the high cost of necessities such as food and fuel, while the cost of borrowing for households remains high. Weaker economic activity has also led to much slower growth in employment than has been seen over the past decade.

Lower real disposable income growth, and more importantly, the on-going correction in the housing market, have forced households to reduce their consumption and the rate at which they accumulate debt. Declining house

prices are also limiting the scope to finance consumption by borrowing against housing assets. This constraint looks likely to continue as house prices are expected to fall further and credit conditions to remain tight.

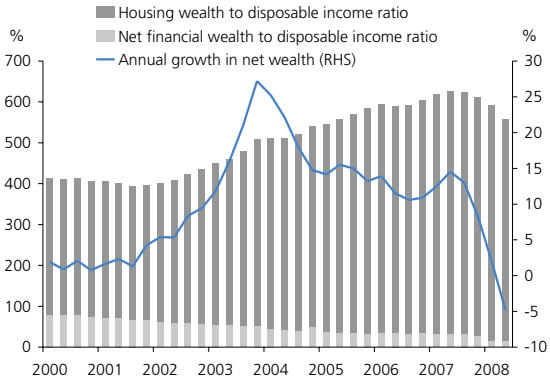
Figure 3.9
House prices and consumption
(annual percent change)



Source: QV Ltd, Statistics New Zealand and RBNZ calculations.
Note: Nominal house prices have been deflated using headline CPI.

Housing wealth is estimated to have fallen about 2.5 percent in annual terms in the year to June 2008, while the value of household financial assets is estimated to have fallen about 1.5 percent over the same period, and household debt has continued to grow (albeit at a sharply slowing rate). The decline in the value of financial assets comes mainly from falling values of equities and managed funds. The falling value of financial assets has been compounded by liquidity pressures associated with finance companies in difficulties and the suspension of withdrawals from some investment funds. It looks likely that both financial and housing wealth will have declined further over the rest of 2008.

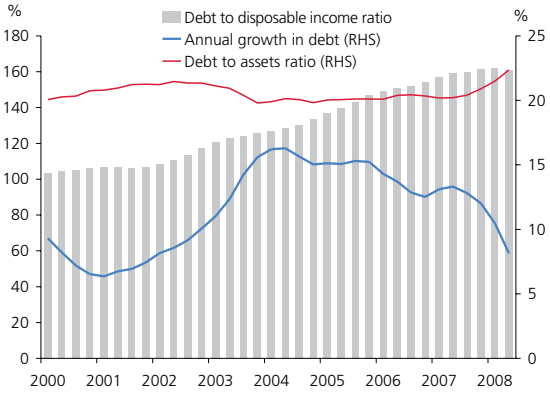
Figure 3.10
Household net wealth



Source: RBNZ.
Note: Household disposable income is gross before deduction of interest paid and consumption of fixed capital. Quarterly household disposable income data have been interpolated from March-year national accounts data.

Households have responded to current economic circumstances by moderating their demand for credit. As figure 3.11 shows, the rate at which households are accumulating liabilities has fallen sharply over the past year and the ratio of household debt to disposable income appears to have peaked. Sharply lower turnover in the housing market means that fewer people are taking out mortgages to trade up or buy their first home.

Figure 3.11
Household debt



Source: RBNZ.
Note: Household disposable income is gross before deduction of interest paid and consumption of fixed capital. Quarterly household disposable income data have been interpolated from March-year national accounts data.

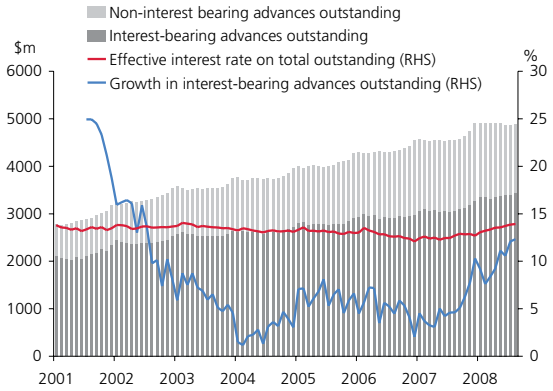
Despite the levelling out of the household sector's aggregate debt-to-income ratio, some households may face financial strain over the coming year, particularly if income comes under pressure due to changes in employment conditions or other factors. Banks have tightened credit standards, so consumers with unsecured borrowing or a high loan-to-value ratio might also find it difficult to get additional funds. Mortgagee sales have increased, as have personal bankruptcies[2] – albeit both from a low base.

[2] Personal bankruptcies have risen since the end of 2007. Changes in the procedures around that time make comparisons with earlier statistics difficult.

Outstanding balances on credit cards also indicate some strain on household finances. The outstanding portion of credit card debt bearing interest grew 12 percent in annual terms during August, compared to 5 percent in August 2007. This is the fastest rate of growth in this aggregate since 2002.

Figure 3.12

Personal credit card debt



Source: RBNZ.

Overall, the sharp slowdown in consumption and what appears to be an increase in household saving has involved an orderly restructuring of aggregate household balance sheets to-date – notwithstanding signs of financial strain for some households. This process will continue in the near term as the economy continues to soften and asset prices return to more sustainable levels. The retrenchment in household spending will be softened by recent tax cuts and reductions in the OCR.

The US sub-prime mortgage crisis, which began in 2007, has highlighted the risks of overheated housing markets. However, the Reserve Bank, and most market participants, consider the US sub-prime market to have had unique characteristics which the New Zealand mortgage market does not share. Perhaps most crucially, the securitisation of US mortgages appeared to have led to poor credit assessments of borrowers (including the use of erroneous documentation). There was also significant use of temporarily low 'teaser' interest rates that often put the borrower in difficulty once they reset to market rates. While we expect mortgage impairment to rise in New Zealand over the next two years, the rise is expected to be much more contained than in the US.

The disclosure statements of the larger registered banks are starting to include more information about their housing lending (see chapter 4). We are also able to gain some insights from other surveys (see box C, pp. 20-22, which discusses owner occupied mortgage debt). The current housing market in New Zealand will cause some strain for individual households, who may take significant losses if they bought in the last couple of years and are forced to sell in the next couple of years. But given the labour market is not currently expected to deteriorate as much as in earlier periods of economic weakness, such as the early 1990s, most people will not be forced to sell. The major banks have undertaken to work with customers who get into difficulties to avoid foreclosure where possible.

In the rental market, anecdotal data suggest that rents have been coming under downward pressure in recent months, partly because owners may be seeking to rent out properties rather than go to market in a weak environment. However, while available data on debt secured on rental properties in New Zealand are quite sparse, surveys such as the ANZ property investor survey suggest that gearing in the sector overall is not particularly high. Many rental property investors have a small number of properties, and may also have their rental property debt secured against their own residence, which gives the bank a deeper pool of collateral if a borrower does get into difficulty.

(continued on p. 22)

Box C

The distribution of mortgages on owner-occupied housing

This box summarises the Reserve Bank's initial analysis of Statistics New Zealand's Household Expenditure Survey (HES) for 2007, comparing the results with previous surveys conducted in 2001 and 2004.[3] The HES collects data on household expenditure patterns, including some information on household mortgages. For this analysis we focus exclusively on debt secured on owner-occupied properties, as the HES does not comprehensively capture mortgages on investment properties.

While mortgage debt and rising costs will likely be putting pressure on a number of households and reducing discretionary spending, the HES suggests credit risk for the banks remains quite contained. Compared against the HES for 2001 and 2004, the latest survey from 2007 suggests that credit risk did not materially increase over the period. Mortgage debt tends to be disproportionately held by high income households and loan-to-value ratios are generally quite manageable. More subtly, there is little overlap between the segment of households most exposed to negative shocks to house prices (those with high loan-to-value ratios) and the segment most exposed to negative shocks to income or interest rates (those with high debt-service to income). This provides a margin of comfort to the lender by making it less likely that servicing capacity and collateral value simultaneously become inadequate. While house prices have fallen since the middle of 2007, some simulations discussed below suggests that these (or even larger) house price falls will not be putting a large portion of banks' mortgage books at risk.

Distribution of debt

Mortgage debt is not evenly distributed among New Zealand households. The majority of households (more than 65 percent) have no mortgage (about half of these households rent and half are mortgage-free owners), and among those with mortgages there is a large variation in mortgage size. The median household mortgage debt in the lowest income group (quintile 1) is $27,000 while that in the highest income group (quintile 5) is $137,000 (table C1). Between 2001 and 2007, indebted households in the middle income group (quintile 3) had the largest growth.

Table C1

Indebted households' financial situation in 2007 and changes since 2001

(medians by income quintile, percentage change since 2001 in parentheses)

2007	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Housing debt ($,000)	27	68	87	111	137
	(-6.9)	(44.7)	(47.5)	(29.1)	(26.9)
Housing asset ($,000)	201	244	305	316	451
	(85.8)	(85.8)	(119.2)	(91.5)	(108.8)
Debt-to-asset ratio (LVR) (%)	14.7	28.7	33.1	41.3	36.0
	(-53.3)	(-41.2)	(-25.8)	(-24.1)	(-33.0)
Debt service ratio (%)	26.7	21.7	20.4	18.4	16.3
	(-5.3)	(-9.6)	(-6.0)	(-1.1)	(4.5)
Share of total housing debt (%)	1.0	6.1	19.9	30.6	42.4
	(-63.0)	(-23.8)	(18.5)	(1.3)	(0.0)
Share of total indebted households (%)	3.4	10.4	22.9	32.0	31.3
	(-55.3)	(-16.8)	(5.5)	(12.3)	(5.0)

[3] Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Statistics New Zealand. As discussed in the May 2006 *Financial Stability Report*, HES is not a particularly accurate measure of total mortgage debt and other similar macroeconomic aggregates. Instead, it is a useful source of information about the characteristics of typical individual mortgage debtors.

in mortgage debt followed by those in the second-highest income group (quintile 4) and the highest income group.

Loan to value ratio

The median loan to collateral value ratio (LVR) has fallen since 2001 in all income groups, suggesting that an increase in housing values has more than offset the increase in the level of debt over this period. The median ratio of loan to collateral value (LVR) tends to rise with income, suggesting that higher-income households tend to be more highly geared.[4] The distribution of LVR by income (figure C1) shows most indebted households in the lowest income group (quintile 1) have a low LVR (less than 20 percent). Typical LVRs are higher in the 3 upper income quintiles. There are still relatively few 'very high' LVRs (above 80 percent).[5]

Figure C1

Distribution of debt to asset ratios by household disposable income in 2007

(percent of indebted households)

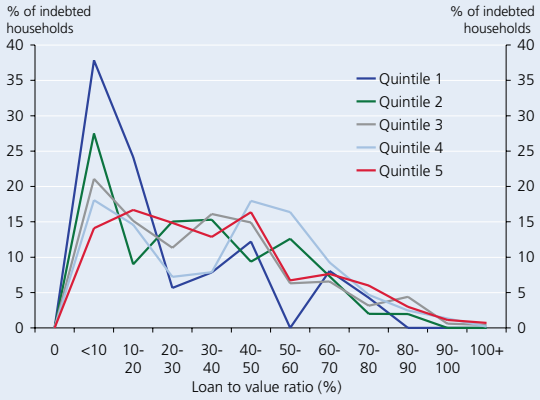
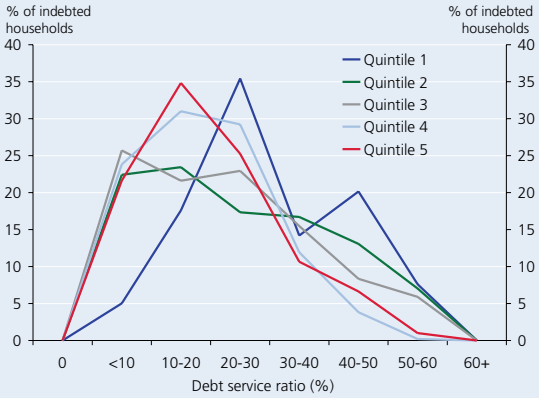


Figure C2

Distribution of debt service ratios by household disposable income in 2007

(percent of indebted households)



Debt service ratio

In contrast, based on the ratio of debt-service to disposable income (DSR), indebted households in lower income groups appear more vulnerable. The median DSR falls with income (table C1). The proportion of households with DSR above 40 percent is highest among the lowest income group, and substantially lower in the highest two income groups (figure C2).

Potential impact of macroeconomic shocks

To gain some insight into the possible effects of the economic slowdown (and what might happen if the slowdown turned out worse than anticipated), we calculated the impact of a shock to unemployment, interest rates and house prices on the proportion of those households that have both high LVRs and high DSRs. Specifically, we considered their effects on the number of households with LVRs above 80 percent and DSRs above 55 percent.[6] Although these ratios are chosen somewhat arbitrarily, households that fall simultaneously into both of these categories will tend be more likely to experience financial distress, and be more susceptible to default on servicing their loan in the event of a shock to income or

[4] The evidence may also reflect the fact that households who have been active in housing market in recent years (including new entrants to the housing market) tended to be in the higher-income segment of the household sector.

[5] Relatively high LVRs will represent a higher proportion of bank's mortgage debt by value. The proportions shown in the bank disclosure data in chapter 4 are also higher because they include rental property, and use the value of collateral at the time the mortgage was arranged rather than the estimated current value.

[6] A similar exercise was performed in the Bank of England *Financial Stability Report* (October 2007) and Riksbank *Financial Stability Review* (June 2004).

a sharp rise in interest costs. Moreover, in the event of default, it would be more likely that the lender would not be able to fully recover the value of the loan for these households (given the high LVR).

The results (table C2) indicate that even a large shock to any variable on its own would not put a large proportion of households into these LVR and DSR categories simultaneously. When the smaller shocks occur simultaneously,[7] the proportion of such households rises to about 0.9 percent. Larger than expected shocks to all 3 variables could push the proportion to around 3.5 percent of households or nearly 7 percent of the mortgage debt captured in the HES. This is a substantial rise, but given that only a portion of vulnerable debt would lead to losses, this would still not lead to delinquencies and banking sector stress on the scale being seen in the US. The expected continued reduction in interest rates should also help to ease pressure on many homeowners. Overall, while some households will be under strain and the banks are likely to see higher residential loan impairment in the next couple of years than at any time in the previous decade, loan losses are likely to be manageable.

Table C2

Proportion of indebted households with both LVR over 80 percent and DSR over 55 percent after assumed shocks in house prices, unemployment, and interest rate

	Baseline	Scenario analysis							
		House price shock		Unemployment shock		Interest rate shock (basis points)		Combination of shocks	
		-15%	-30%	rise to 6%	rise to 9%	+100	+300	smaller	larger
Percent of indebted households	0.1	0.1	0.5	0.2	0.3	0.5	0.7	0.9	3.6
Percent of debt	0.2	0.2	0.7	0.6	0.7	0.8	1.3	1.8	6.9

Shocks are applied either across all mortgage holders (e.g. rise in interest rates) or probabilistically (e.g. rise in unemployment).

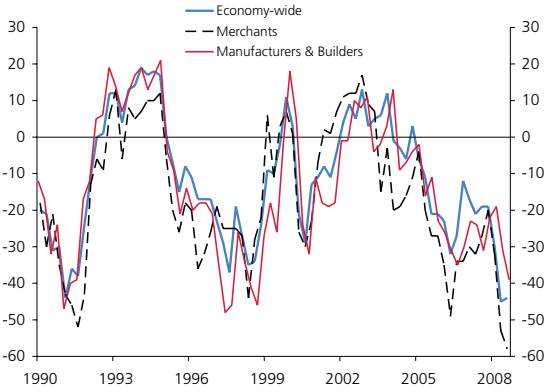
[7] The smaller of the assumed shocks in house prices and unemployment rate are similar to the troughs projected for the 2009-2011 horizons in the RBNZ's September 2008 *Monetary Policy Statement*. Conversely, the September 2008 *Monetary Policy Statement* also showed that a gradual fall in interest rates was projected.

Developments in the business sector

Firms are also facing more challenging economic conditions with the slowdown in domestic and international demand, coupled with higher costs and reducing profit margins (figure 3.13). Declining profitability and tighter credit conditions are also affecting business investment intentions, particularly since the falling exchange rate has increased the cost of imported capital to firms. Those industries exposed more heavily to consumer demand are under particular pressure. Retail-related share prices, for example, have underperformed relative to share prices as a whole (figure 3.14). Residential and commercial property development is another sector under pressure given funding pressures and the increase in yields sought by investors (see box D: developments in the commercial property sector).

Figure 3.13

Survey measures of business profitability



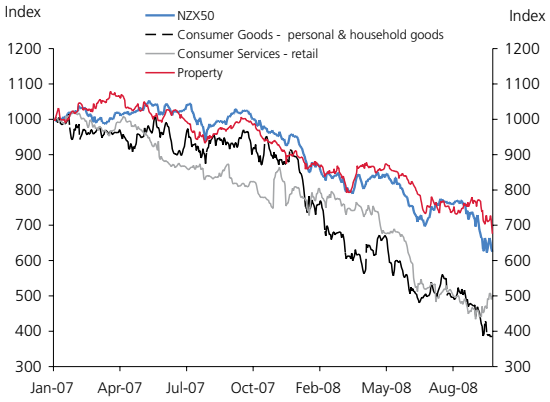
Source: New Zealand Institute for Economic Research (NZIER).

Note: Net percentage of respondents to the NZIER Quarterly Survey of Business Opinion (QSBO) reporting an increase in profits over the past 3 months.

Figure 3.14

NZ equity prices

(indices normalised to 1000 on 1 Jan 2007)



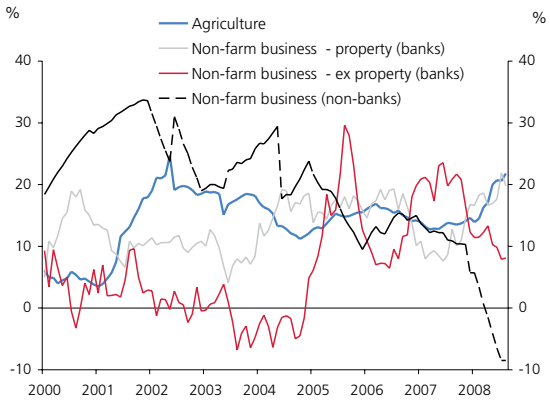
Source: Datastream.

The global credit crisis has increased the cost of business borrowing, weighing both on investment and the ability of some firms to weather a broader economic slowdown. Lending to the business sector from the non-bank sector has fallen sharply, while business lending (ex property) from registered banks has steadily slowed over the past year. However, at around 8 percent (figure 3.15), the annual growth in aggregate business credit growth (ex property) is still reasonably robust, and likely to partly reflect some firms utilising pre-committed credit facilities to a greater extent. The reduced availability of direct funding sources, such as commercial paper markets, may have also led to a greater reliance on bank funding by some large corporates than would normally be the case. Registered bank lending to the property sector has increased over the past year, despite

Figure 3.15

Domestic financial institutions' lending to the business sector

(annual percent change)

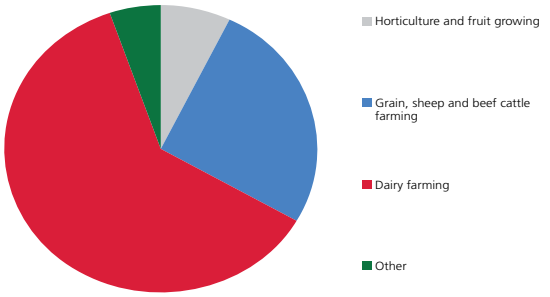


Source: RBNZ.

Figure 3.16

Registered bank lending to agriculture

(as at June 2008)



Source: RBNZ.

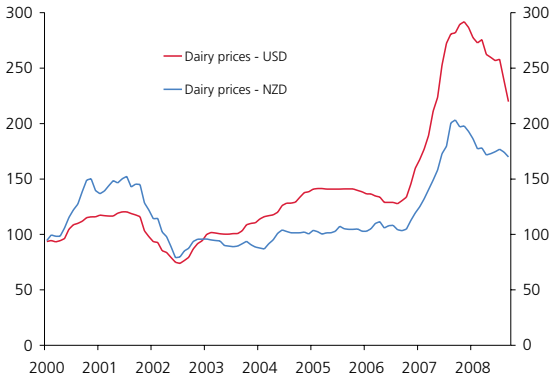
pressures in the residential and non-residential property development sectors (see chapter 4 for more discussion). It seems likely that total business credit growth will slow significantly further in the coming months.

Lending to the agricultural sector is growing at near record rates on the back of a buoyant dairy sector and associated growth in rural land prices. Across the whole banking system, several years of fast growth have made agriculture an increasingly larger share of lending.

This lending is dominated by the dairy sector (figure 3.16). The Reserve Bank's annual agricultural credit survey reveals that dairy lending accounted for 61 percent of total agricultural loans outstanding as at June 2008. High dairy payouts have increased the value of dairy land directly, as well as the value of land capable of supporting dairy farming.

Figure 3.17

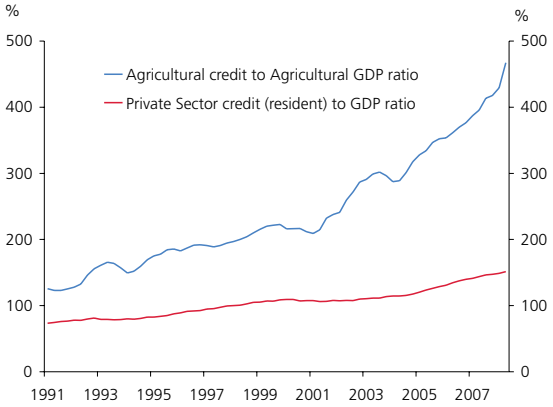
Dairy product prices



Source: ANZ.

Figure 3.18

Agricultural debt-to-output



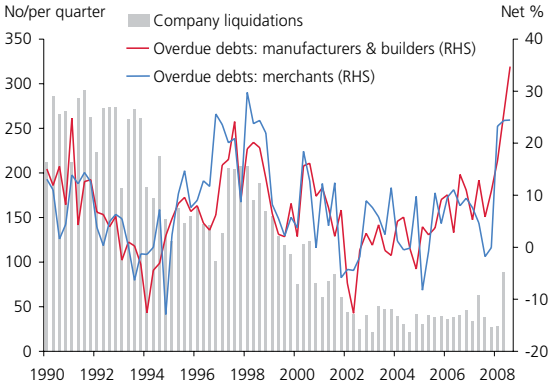
Source: Statistics New Zealand and RBNZ.
Note: Agricultural debt is defined as lending from registered banks and non-banks to the agricultural sector.

Debt has risen as those land values have increased. Global dairy prices have been falling recently. Although the falling NZD provides some insulation to farmers' incomes (figure 3.17), NZD dairy prices have fallen significantly since the last official data in the figure. As discussed in chapter 4, the Reserve Bank considers that agricultural lending has become a riskier component of bank balance sheets that should be managed carefully.

Signs of pressure on business cash flows across the broader business sector have increased in 2008. The level of overdue debtors has spiked up over the first half of this year, as measured by the QSBO survey. The number of company liquidations increased sharply in the June quarter, albeit from a low base. However, indicators to hand suggest that the overall level of distress in the sector is not out of line with past experience. New Zealand businesses with solid balance sheets should remain well-placed to weather the economic slowdown ahead, although this will depend partly on their ability to continue to access credit from the financial system.

Figure 3.19

Signs of business stress



Source: NZIER and the Ministry of Economic Development (MED).
Note: Overdue debts – net percentage of respondents to NZIER Quarterly Survey of Business Opinion (QSBO) reporting late payment from debtors.

Box D

Developments in the New Zealand commercial property sector

Commercial property values ultimately depend on the current and expected future demand from firms to rent the property, as well as required rates of return (yields) on the part of investors. With some firms looking to downsize as the economy slows, and required rates of return rising, the New Zealand commercial property sector faces a more challenging time ahead.

Industry reports, together with our regular business contacts, suggest that demand for quality space remains robust across the office, retail and industrial commercial property classes, and that rents and yields have not softened significantly. However, within secondary or non-prime commercial space, pressures are more acute. Vacancy rates and required yields are increasing as demand for secondary space declines. Retail property looks particularly vulnerable in some areas, given the decline in consumer spending that is under way. Some property owners are now choosing to offer refits on premises, or rent holidays, to secure tenants as conditions for businesses deteriorate.

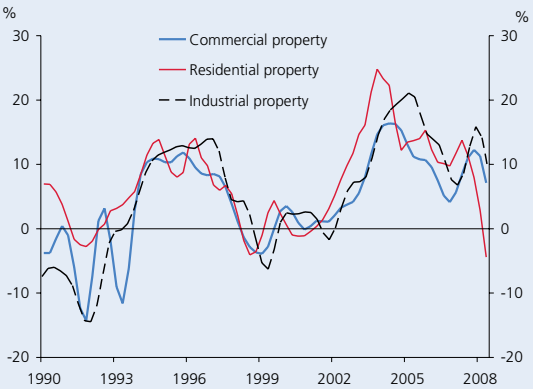
The decline in the perceived value of commercial property is apparent in the falling share prices of New Zealand-listed property trusts (figure 3.14), and (to a lesser extent) in the property price series produced by QV Ltd (figure D1). Falls in commercial property prices are likely to reduce the incentive to construct more commercial property. Developers who do wish to build also currently face greater challenges obtaining finance, particularly with the recent demise of many non-bank property lenders. Banks are believed to be sticking to higher quality projects and tightening conditions.

Many development projects have been put on hold, or scrapped altogether. Non-residential construction recorded in the national accounts has started to decline, while the more forward-looking building consents data (figure D2) point to a further step down in commercial property construction over the coming year – particularly for the retail subcomponent.

Figure D1

Commercial and industrial property prices

(annual percent change)



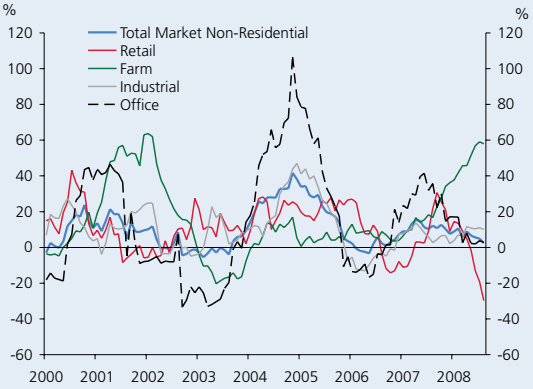
Source: QV Ltd and RBNZ calculations.

Note: Quarterly series for Commercial & Industrial property prices interpolated from half-yearly QV data.

Figure D2

Market non-residential building consents

(annual average percent change)



Source: Statistics New Zealand and RBNZ calculations.

The outlook for the commercial property sector is tightly linked to developments in the wider economy. A gradual recovery in activity during 2009 would support occupancy, although there is a clear risk that the sector will be forced to weather a more prolonged downturn. There does not appear to be substantial over-supply of commercial property, which should help to underpin valuations over the medium-term. But overall, as noted in chapter 4, there is likely to be elevated credit risk in commercial property lending at present.

4 New Zealand's financial institutions

New Zealand's banks have not experienced the significant deterioration in loan quality seen by many of their international counterparts, nor have they had direct exposure to assets at the heart of the US financial crisis. However, global developments have severely affected the availability of external wholesale financing on which the banks are heavily reliant. The recently announced wholesale guarantee scheme is expected to assist the banks in obtaining access to funds in global markets. In addition, the Reserve Bank has continued to work to ensure banks have securities suitable as collateral for Reserve Bank lending if wholesale funding markets remain dysfunctional for a prolonged period. Nevertheless, reduced availability of wholesale funds and a weaker economy are both contributing to a significant tightening of credit standards.

Weaker economic activity over the past year has been reflected in increased provisioning and declining profits for New Zealand banks. Although we expect the level of non-performing loans to rise further, the banks' capital positions and revenues appear sufficient to absorb these losses. The parents of the Australian owned New Zealand banks also appear well placed to weather some deterioration in asset quality.

Some non-bank deposit takers, particularly those with substantial investments in the property sector, have continued to face elevated rates of withdrawal and difficulties with some of the projects they have funded. The retail deposit guarantee scheme should provide eligible organisations a chance to reorganise, but fundamental changes in the manner in which property development financing (and other non-bank finance) is provided look likely to occur in the future.

4.1 The banking system

Funding and liquidity

In our May *Report*, we discussed the banking system's role in the funding of New Zealand's external position through its reliance on non-resident wholesale funding. With much of this funding raised for relatively short terms, we noted the banks' vulnerability to disruptions in global funding markets. These risks have come to the fore recently with the banks' key global funding markets — particularly the US commercial paper market — essentially unavailable during September and October as global financial market pressures intensified.

Across the New Zealand banking system, about 55 percent of total bank funding (table 4.1) is obtained from wholesale sources, with retail funding providing the remainder. The proportion of wholesale funding is relatively high in New Zealand, particularly given that most of the assets held by the banking system are long-term in nature and thus relatively hard to on-sell if necessary.[1] Table 4.1 shows that much of this wholesale funding is sourced directly from overseas, often at relatively short terms. This non-resident wholesale funding of the banks effectively funds the New Zealand current account deficit (figure 4.1).

Since the credit crisis began, wholesale funding has fallen as a share of total funding, with the banks attracting increasing volumes of retail deposits (figure 4.2), partly reflecting investor concerns around alternative investments and partly reflecting more competitive pricing. The increased competition for retail funds reflects the rise in wholesale funding costs, particularly for longer-dated funding. Retail funding is likely to continue to grow on the back of the

[1] In other counties where securitisation of mortgages and other bank assets is more prevalent, banks tend to hold a greater proportion of short term assets such as cash and securities available for sale, making it easier to shrink the balance sheet if required.

Table 4.1

Structure of banking system funding

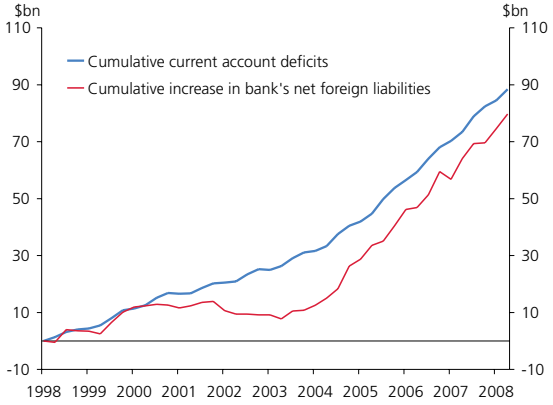
(August 2008)

	$ Billions	Share of total funding (%)
Retail funding (NZD):	133	44
Resident wholesale funding:	40	13
Non-resident wholesale funding:		
*Maturity less than one year (estimated)**	*81*	*27*
*Maturity greater than one year (estimated) ***	*46*	*15*
Non-resident wholesale funding:	127	42
Total funding	299	100

* Includes overseas commercial paper and other short term international funding.
** Includes overseas issued bonds and other term international funding.
Source: Wholesale and retail definitions and funding data are from the RBNZ SSR August 2008. Non-resident funding maturities are estimated using March 2008 Balance of Payments data.
Note: Table excludes domestic interbank lending, capital and reserves and non-funding liabilities.

Figure 4.1

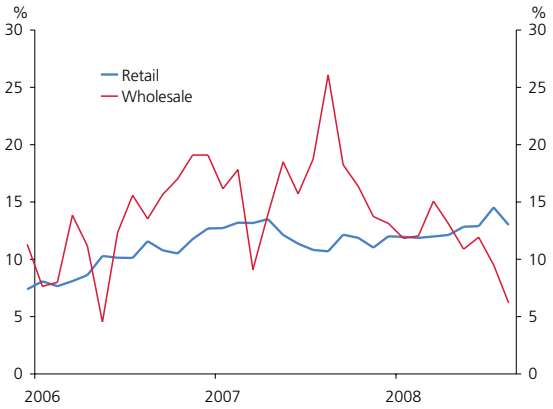
The funding of the current account deficit



Sources: Statistics New Zealand, RBNZ.
Note: 'Net foreign liabilities' are registered banks' non-resident funding less non-resident claims.

Figure 4.2

Annual growth in bank funding



Source: RBNZ SSR, as at 31 August 2008.

recovery in household savings, although weaker economic activity will limit the overall growth rate. However, retail deposits can only gradually replace wholesale funding for the banking system as a whole.

The Reserve Bank has implemented a number of measures over the past year to ensure the ongoing liquidity of the banking system in the event that banks are unable to access wholesale funding markets. Following our May announcements that we would begin accepting residential mortgage-backed securities as security in our domestic operations, the banks have been preparing these securities (and associated legal structures). The first tranches of securities have been issued, with more on the way. Given the extraordinary circumstances in financial markets we also consulted institutions about the possibility of accepting other asset backed securities (ABS) as collateral. We also announced that we would be prepared to take mortgage backed securities before they had been formally rated, with an additional fee. Finally, we have also widened the collateral we are prepared to take in Reserve Bank Open Market Operations (OMOs), where the Reserve Bank lends to New Zealand banks on a secured basis, to include Bank paper,[2] and increased the term and size of our liquidity injections.

[2] Bank paper eligibility for the OMO was announced on September 19. Bank paper was made eligible as a security for overnight lending in August 2007. OMOs are for longer terms.

In late October, it was announced that the Crown would extend guarantees on wholesale funding to highly rated New Zealand financial institutions. This wholesale funding guarantee should make it possible to access offshore funding markets before they have fully normalised, since buyers of guaranteed securities are effectively buying a government instrument. Significant risk-based fees will be charged (see chapter 6), as a means of ensuring the guarantee is used only when normal non-guaranteed funding is unavailable at reasonable prices. The guarantee fee also creates incentives for financial institutions to continue to pursue other funding strategies (including the preparation of mortgage backed securities, and continuing to utilise funding from overseas parent banks).

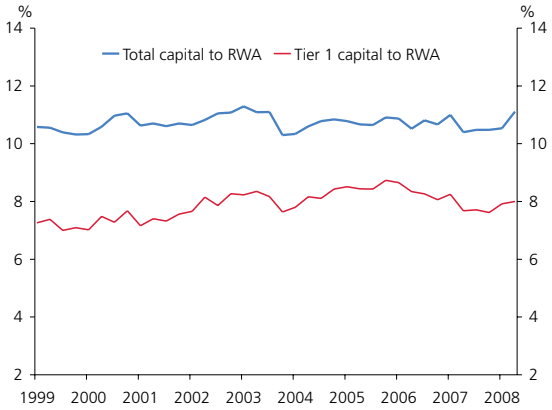
Although the Reserve Bank's additional liquidity facilities and the wholesale funding guarantee scheme should enable the banking system to continue to function in the event of ongoing global wholesale market disruptions, they are not intended to replace prudent management of funding and liquidity by the institutions themselves. The Reserve Bank has recently published a consultation paper outlining a proposed prudential liquidity policy that will require the banks to meet minimum standards on the proportion of their assets funded by retail deposits or long-term wholesale liabilities (core funding) so as to reduce their vulnerability to market disruptions.[3] It is expected that the necessary balance sheet restructuring will take some time to achieve, particularly given current market conditions. This constraint will need to be taken into account when agreeing realistic timelines for an appropriate transition path. Nevertheless, the transition is seen as an important objective of prudential policy and one that the Reserve Bank will continue to emphasise in the period ahead.

[3] There are other minimum standards related to short term funding. Further details can be found in chapter 6, as well as the consultation paper.

Capital

Despite recent pressures on wholesale funding, New Zealand banks remain well capitalised as the global financial crisis enters its second year, affording banks flexibility in dealing with unexpected losses emanating from challenging operating conditions. The ratio of tier one capital to total risk-weighted assets for locally incorporated banks remains stable at 8 percent (and there is little variation amongst the banks). The ratio of total capital to risk-weighted assets sits at just over 11 percent. Banks that are participating in the wholesale guarantee scheme have agreed to maintain tier one capital ratios near current levels and at least 2 percent higher than the 'normal' regulatory tier one minimum of 4 percent.

Figure 4.3
Banks' capital
(ratio to Risk Weighted Assets (RWA))



Source: Registered banks' General Disclosure Statements (GDS), as at 30 June 2008.

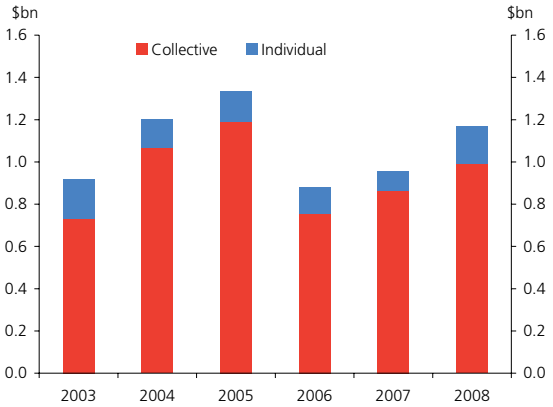
Asset quality

Provisioning levels have been rising steadily as credit managers and risk models forecast higher levels of expected losses as the economy weakens. Total provisions as a ratio to total assets have risen to 0.34 percent from a low of 0.30 percent. The ratio is likely to rise further as the economy weakens and bank balance sheet growth slows.

The level of impaired and past due assets remains low but has shown a sharp increase since 2007. Assets are listed as impaired where borrowers are having apparent difficulties in meeting loan terms, and the value of the collateral available to banks, if the borrower defaults, is insufficient to fully cover the loan.

Figure 4.4

Banks' provisioning



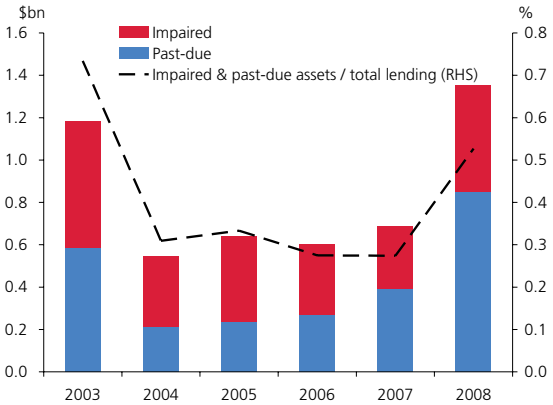
Source: Registered banks' GDS, as at 30 June 2008.

The ratio of impaired and past due assets to total lending is still only about 0.5 percent, suggesting that only $1 in lending is impaired or past due for every $200 lent out. Impairments remain much lower than in the early 1990s, and significant further deterioration would be required to seriously threaten the capital position of the banks.

Banks are not necessarily moving to immediate foreclosure where borrowers are unable to meet scheduled repayments. Most appear to be renegotiating loan terms and repayments to work out loans that have defaulted. There is also evidence that the banks are proactively approaching at-risk borrowers to work through potential problems that could lead to loan default. On the residential side, many have recently committed to continuing to look for ways to give borrowers in difficulty room to resume repayments.

Figure 4.5

Banks' asset quality



Source: Registered banks' GDS, as at 30 June 2008.

Corporate balance sheets do not generally appear to be highly leveraged. In Australia some highly leveraged property and infrastructural companies have faced difficulties and these exposures are causing some manageable but high profile exposures for the Australian banking system. The New Zealand listed property sector is generally less heavily geared. There has been some risky gearing of property development, but the riskier loans were typically written by finance companies. So while (as noted below) we are surprised by recent growth in bank lending to property, most bank lending to the sector is likely to be fairly well secured.

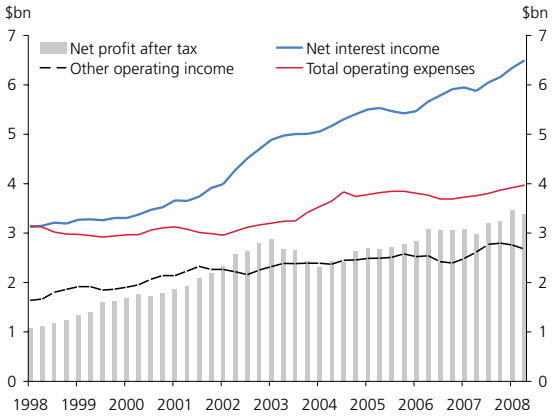
Income and profitability

Capital levels continue to be bolstered with after-tax profit rising 13.4 percent during the year to June 2008 for the banking sector. Other operating income expanded by 2.2 percent during the year. Net interest income grew by 10.6 percent. This reflected annual growth in interest earning assets of 10.7 percent, offset by a small fall over the year in the net interest margin, which appears to have stabilised in recent quarters at around 2.1 percent. These results largely pre-date global market turbulence and are unlikely to be sustained in the period ahead. As discussed below, growth in interest earning assets is expected to level off, while rising non-performing loans will put pressure on expenses. Costs associated with obtaining funding in difficult market conditions may pressure net interest margins to the extent that the banks are not able to fully pass them on to customers. Fortunately, there is a substantial profitability buffer that should prevent these issues from putting substantial downward pressure on capital positions.

Overall, profit growth is likely to diminish with the slowing economy, some deterioration in asset quality, and higher funding costs. Nevertheless, the New Zealand banking sector is unlikely to suffer major losses or dislocation unless there is a drastic deterioration in the macroeconomic outlook.

Figure 4.6

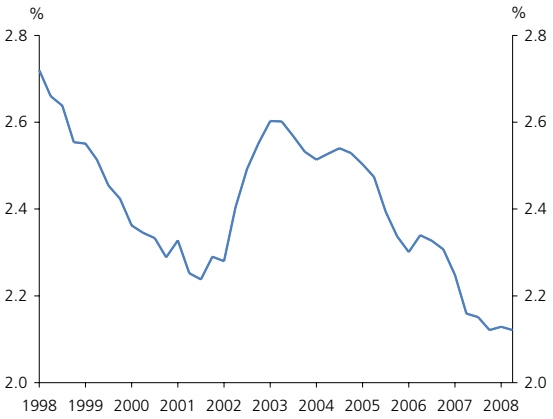
Banks' financial performance



Source: Registered banks' GDS, as at 30 June 2008.

Figure 4.7

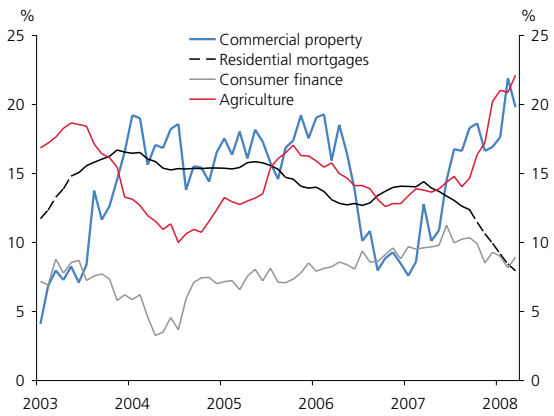
Banks' net interest margin



Source: Registered banks' GDS, as at 30 June 2008.

Figure 4.8

Banks' annual lending growth



Source: RBNZ Standard Statistical Return (SSR), as at 31 August 2008.

Lending

Annual balance sheet growth continues to slow, largely due to a weaker housing market with annual growth in residential lending falling to 8 percent. Lending growth to business is also easing due to a slowing economy and challenging funding conditions. Recent monthly outturns suggest lending growth will continue to weaken for some months to come.

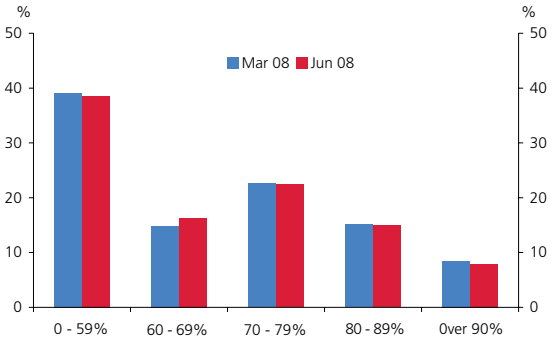
Banks have considerable exposure to housing loans, with that asset class representing 43 percent of total assets. As discussed in chapter 3, higher mortgage rates are likely to be putting financial pressure on borrowers as loans reprice. Further asset quality deterioration in bank mortgage portfolios is likely but (as discussed in chapter 3) mortgages are not expected to default at the rates seen in the US, given more solid loan origination practices, greater security cushions, and a variety of other factors.

The major banks are beginning to report loan to value ratios (LVR) for their mortgage books as part of their risk-based capital weighting analysis in their disclosure statements. LVRs across the major banks that have reported so far are shown in figure 4.9. The statistic is loan value (current) divided by the collateral value recorded when the loan was originated. About 23 percent of mortgages appear to have LVRs above 80 percent. However, rising property prices over recent years mean that the ratios of current loan value to current collateral value are probably lower on average. Higher LVRs (particularly above 90 percent) were generally more easily obtained by borrowers where the bank had some other security, such as a guarantee from a parent of the borrower, or where the borrowers had an income that could amply cover debt servicing.

As discussed in chapter 3, agricultural lending growth over recent years has been extremely robust. Farm values have continued to rise, supported by generally firm export commodity prices. However, the strength of commodity prices is not assured, particularly given challenging global economic conditions, and the possibility of a sharp decline in farm values cannot be discounted. The Reserve Bank believes agricultural lending needs to be managed recognising these risks and lenders need to conduct appropriate stress tests that reflect the weaker earnings that could occur during

Figure 4.9

Banks' housing lending by loan-to-value ratio



Source: Large registered banks' GDS, as at 30 June 2008 excluding BNZ.

periods of weak demand for New Zealand's agricultural products.

Bank lending to the property sector has also grown significantly faster than bank lending to other businesses recently. This may reflect a number of factors, including sales by overseas interests of domestic commercial property (where the New Zealand buyer uses a local bank for financing, but the vendor had not). Commercial property lending is typically secured against a tangible asset and some large players in the commercial property market, such as property trusts, have relatively low gearing. Nevertheless, in the current environment assets like commercial buildings have been declining in value (box D). The declining values of listed property trusts, for example, shows that the decline may be significant in some segments. For these reasons the Reserve Bank believes that commercial property exposure should also be monitored with additional care in the current environment.

Overall, bank balance sheet expansion over the next few years is likely to remain more modest than over the past decade, given a weak housing market and an outlook of sluggish activity in the domestic economy more generally. Additionally, ongoing financial turbulence and elevated wholesale funding costs are likely to prompt a period of relatively tight credit standards.

Australian parent banks

The Australian parents of New Zealand's four largest banks experienced weaker results over the first half of 2008 than in previous reporting periods, largely due to their exposure to rising wholesale funding costs. Credit growth has been slowing, and this is expected to continue as the Australian economy softens. But the Australian banks continue to be seen as fundamentally stronger than many international peers, remaining profitable while other institutions have been announcing large losses. They have little exposure to the exotic securitisation products that have caused major problems for international institutions; while they have taken some losses on these sorts of transactions, they have been small in the scale of their balance sheet. They also have generally held their mortgages on their own balance sheet and thus retained full incentives to originate with proper risk management. Perhaps partly because of this, Australian lending to housing was not sufficient to drive substantial oversupply in the Australian housing market (unlike in some US regions) and the Australian housing market is not expected to slow as severely as in the US.

Despite these positives, the extraordinary freeze in global funding markets has affected the parent banks as well as the New Zealand subsidiaries, albeit to a lesser extent. This has prompted the Australian Government to follow a number of overseas governments in announcing plans to offer a scheme for guaranteed wholesale borrowing by Australian banks.

4.2 Non-bank financial institutions

Upheaval in New Zealand's non-bank financial sector has continued over the past six months, with several significant property finance companies (including Hanover Finance, Strategic Finance, St Laurence, Dorchester Finance and Dominion Finance) suspending repayments to investors. In most cases, management has proposed (or is expected to propose) a formal moratorium to allow the institution time to liquidate assets and repay investors. But trustees and investors have to approve these proposals, and in some cases that approval has not been forthcoming. Where a restructuring cannot be agreed a receiver is appointed to wind the firm down, and there have been further receiverships in the past six months.

While there were shortcomings in the lending and financial structure of many of the deposit-taking finance companies, the extent of the weakness in the sector also reflects the major global downturn in sentiment towards property investments, and declining risk appetite more generally. There has also been significant volatility in the Australian property company sector.

Current market conditions also make it harder to restructure weak organisations. Although there have been some recapitalisation plans where owners or related institutions have looked to contribute additional capital, potential investors in the sector have been limited given current high levels of risk aversion.

The announcement on October 12 that the Government would temporarily guarantee the retail liabilities of financial institutions (including eligible finance companies and savings institutions) should ease funding conditions for the sector as a whole. Some weaker institutions, such as firms that were either in moratoria or breaching their trust deeds on October 12, will not be able to access the scheme unless they are able to rectify the matters that made them ineligible and obtain a credit rating of BBB- or better. However, some of these institutions (or their assets) may be purchased by other firms covered by the guarantee, which might help to make the consolidation in the sector more orderly.

This consolidation was occurring even before the deposit guarantee scheme was announced. Some of the larger non-bank financial institutions with investment grade credit ratings had relatively stable rates of reinvestment and were also able to issue a range of new capital or term funding instruments over the last six months. Southland Building Society was registered as a bank, while Pyne Gould Corporation announced it would also seek to register its financial services operations as a bank.

During the recent period of high profile weakness in the non-bank deposit taking sector, an increase in redemptions from some mortgage investment trusts and unlisted property trusts forced a number of these trusts to temporarily suspend withdrawals. In some cases, these vehicles were vulnerable because they had limited liquidity readily available. In other cases, the problem also reflected structures where lags in the valuation process could have meant the first people to exit the fund in a declining market would get a better return than other investors. Managed funds are not typically directly covered by the deposit guarantee and wholesale guarantee schemes, but many will indirectly be afforded some protection.[4]

For some years before the wave of finance company failures, the Reserve Bank had expressed concern that the interest rates offered by many finance companies were not commensurate with the risk that the firm would get into difficulties. The deposit guarantee scheme may temporarily prolong this situation, since the risk of failure of an institution accepted into the scheme over the next two years falls on the Government. In the longer term, the accelerated regulatory changes for the non-bank deposit taking sector discussed in chapter 6, coupled with heightened scrutiny on the part of investors, are expected to prompt further increases in differentiation between relatively secure versus relatively untested institutions. For example, mandatory credit ratings from a recognised credit rating agency will create a scale for comparing institutions, and comparisons with overseas markets will give investors some idea of what sort of additional premium might be fair compensation for the risk inherent in a lower rated institution.[5]

Given the temporary nature of the deposit guarantee scheme and tighter credit conditions, it seems likely that funding for new projects will be available at stricter terms than those which were available in recent years. Generally this is likely to mean future projects will be structured in a more resilient way (e.g. with a higher proportion of equity from the owner of the project) that creates less risk for lenders to the project.

There may also be greater use of listed structures with immediate price discovery. For example, listed property trusts cannot experience liquidity problems of the sort that unlisted property funds are currently experiencing (since investors have to sell listed fund units in the secondary market rather than redeeming them with the issuer). Similarly, tradable debt securities provide more information to creditors than debenture funding.

[4] **In particular, funds holding debt of banks and other institutions covered by the wholesale guarantee will benefit from the guarantee applying to those instruments.**

[5] **See Widdowson, D. and A. Wood, "A Users Guide to Credit Ratings" Reserve Bank *Bulletin*, September 2008.**

While current issues in the mortgage backed security market overseas have reduced issuance of mortgage backed securities worldwide, over time we are also likely to see a return to the use of these instruments as well. In a market with sufficient transparency and analysis by informed investors, these should generally be expected to offer a fair return for risk. Overall, development of sounder and more transparent funding structures could help ensure sound decisions about allocation of financial resources, potentially avoiding repetition of the boom-bust nature of the current property cycle.

5 Payments systems

While the strains in global financial markets have affected New Zealand's payment systems, the systems have continued to function reasonably well through this period, despite some technical issues that are being resolved. Meanwhile, work has been under way to strengthen the governance arrangements under which the various payment systems operate. Changes to governance arrangements have recently been implemented to Austraclear, the security settlement system operated by the Reserve Bank. A new governing body for the retail payment system is expected to be established in April 2009.

5.1 High-value payment system performance

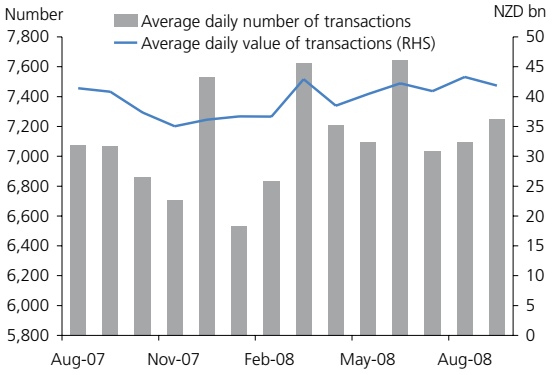
Typically, periods of uncertainty generate additional trading activity in financial markets and those additional transactions all have to be settled through payment and settlement systems. In such circumstances, not only do payment systems need to be able to handle the increased volumes of transactions, but also systems need to be able to continue to operate smoothly when participants in the system either delay payments or fail to meet their obligations. Any major disruption to payment systems could pose a significant threat to financial stability.

New Zealand's payment systems have proved resilient during the recent market turmoil. The two major high-value payment systems through which New Zealand dollar payments are settled are the Reserve Bank's Exchange Settlement Account System (ESAS) and the Continuous Linked Settlement (CLS) System owned by CLS Bank International. Despite on-going growth in the volume and value of transactions to be settled, particularly in the case of CLS (figures 5.1 and 5.2), both systems have continued to operate satisfactorily over recent months with settlements continuing to be completed, albeit, in the case of ESAS over the last few weeks, somewhat later in the day than usual.

All inter-bank New Zealand dollar payments are ultimately settled through ESAS. Increased nervousness in financial markets has seen participants in ESAS who are acting as New Zealand dollar payment agents for overseas financial institutions adopting a more cautious approach to the extension of credit to those financial institutions. Consequently, payments made via ESAS are to some extent being made later in the day than was previously the case. Technical problems with one major participant's own systems resulted in that participant delaying submission of payment instructions to ESAS on two occasions, and one of those problems resulted in a decision to extend ESAS end of day by 30 minutes on September 16.

In part, the continuing smooth operation of ESAS is due to the steps taken by the Reserve Bank to ensure that participants in the system are able to readily access sufficient settlement cash to make payments, and that cash is well distributed among participants.

Figure 5.1
ESAS transactions



Source: RBNZ.

Payment systems can also be disrupted by operational difficulties resulting from problems with the system itself or with the communication networks through which participants submit transaction instructions. The ESAS/Austraclear system has continued to exhibit high availability.[1] On occasions during July and August, the response times for ESAS and Austraclear have been slow, but the impact of these problems on users has not been severe. The Reserve Bank and its provider of technology support are continuing to work to resolve the underlying problem.

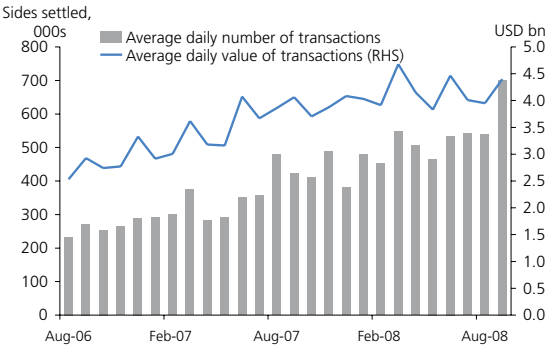
Although the CLS System is operated by a US-incorporated institution, it is a systemically important payment system for New Zealand because an estimated 60 percent of the obligations of New Zealand banks arising from foreign exchange transactions are settled through CLS. CLS successfully negotiated a particularly testing period in mid-September with the filing for bankruptcy of Lehman Brothers and a new record for the volume of transactions settled on one day. The significant growth in the volume and value of CLS settlements reflects increased trading activity in international foreign exchange markets as participants in those markets have responded to volatility in exchange rates, and possibly also a heightened awareness of the benefits of settling foreign exchange transactions on a payment versus payment basis in times of uncertainty.

There are two main securities settlement systems in New Zealand: the Reserve Bank's Austraclear system, and the NZX Faster system. The Austraclear system is used by a variety of institutions to settle transactions in bonds, shares and cash. In May 2008, the Austraclear system handled average daily trades of $6.7 billion. In the same month, the NZX Faster system for share trading handled average daily trades of $125 million. We understand that NZX intends to introduce a central counterparty clearing house as a replacement for their current Faster settlement system. Both the Austraclear NZ system and the new NZX system are expected to seek designation under the amended Part 5C of the Reserve Bank Act as soon as that amendment is passed into law.

[1] **Austraclear is the security settlement system operated by the Reserve Bank. Austraclear and ESAS are closely linked technically and problems with computer hardware or communications networks will typically affect both systems.**

Figure 5.2

CLS transactions



Source: CLS Bank.

5.2 Payment system governance

The May 2007 *Financial Stability Report* explained the importance for payment systems of governance arrangements that ensure that the interests of all stakeholders are properly addressed. The *Report* also noted proposals by the Reserve Bank, as the owner of ESAS and Austraclear, to make the governance arrangements of those systems more effective, accountable and transparent for system users.

The proposed changes have now been implemented for Austraclear with the second annual report of the system having recently been released and the Austraclear User Advisory Committee having been established.

The New Zealand Bankers' Association (NZBA) has also been leading a project seeking to give direct participants in the retail payment system representation in the governance of that system and to give non-bank financial institutions access to the retail payment system. Work on this project is continuing and it is intended that the new body governing the retail payment system will be established in April 2009.

5.3 Settlement risk in the retail payment system

Previous *Reports* have highlighted the risks associated with the net deferred settlement of payments in the retail payment system, particularly given that a significant number of high-value transactions (transactions with a value of more than $1 million) continue to be processed through the Interchange and Settlement Limited (ISL) switch.

The industry has continued work on a means of eliminating inter-participant settlement risk in the retail payment system. The approach would involve inter-participant settlement of a debt before the details of the payments were interchanged. Essentially payment details would not be interchanged until payment system participants established that their counterparty payment system participants had settled. Consequently, direct participants in the retail payment system would not be exposed to settlement risk (though their customers would continue to be).

The Reserve Bank's view is that the arrangement being considered could provide for satisfactory risk management in the retail payment system, subject to some important provisos, including that settlement and interchange occur in such a way as to prevent the accumulation of large numbers or large values of payments awaiting settlement. We would also like to see settlement risk issues addressed without undue delay. We have written to the banks noting the slow speed at which this work and the work on governance described above have advanced and signalling that, in light of this and to expedite future projects to meet our policy objectives, we intend to take a more active interest in these payment system governance issues.

6 Recent developments in financial sector regulation

The Reserve Bank has continued to develop prudential liquidity requirements for registered banks in the past six months, and has recently issued a consultation paper on the draft policy. The new framework for insurance and non-bank financial institution regulation has also continued to develop. The decision by the Government to commence a temporary deposit guarantee scheme has some implications for the development of those specific regulatory initiatives, and potentially for the future shape of financial regulation more broadly (box E).

6.1 Liquidity

The Reserve Bank is currently consulting on a new prudential regime for the management of liquidity risk by registered banks.

As discussed in chapter 4, the risks to liquidity of financial institutions posed by current international market conditions are directly addressed by recent extensions to the Reserve Bank's liquidity facilities and the Government's schemes to guarantee retail deposits and some wholesale funding of financial institutions. As mentioned in earlier *Reports*, the Reserve Bank has been developing new prudential liquidity rules that will apply to banks for the medium- to long-term. This comes about as part of our ongoing work to ensure that banking supervision in New Zealand continues to make the best possible contribution to the efficiency and stability of the financial system.

In New Zealand, prudential supervision of liquidity is currently achieved via requirements that bank directors attest to the adequacy of their bank's liquidity-risk management, and by the banks publishing information about their risk and policies for risk management.

The policy on which we are consulting aims to ensure that banks maintain robust liquidity positions measured over both shorter- and longer-term horizons, have robust internal arrangements for managing liquidity risk, and provide clear and useful information to the public and the Reserve Bank about liquidity risk and its management. As such, market and self discipline through publication of information continue to play an important role. At the same time, the liquidity regime will be enhanced by having some additional regulatory discipline by way of some prescription about quantitative, qualitative, public disclosure and regulatory reporting matters.

The quantitative requirements are designed to ensure that banks manage liquidity risk in a way that minimises vulnerability to temporary shocks and unfavourable market conditions. There are two key components of the quantitative policy, one aimed at short-term funding horizons, and one for the longer term funding profile. For the short term, the Reserve Bank is proposing to set minimum requirements for 'mismatch ratios' over horizons of one week and one month. The mismatch ratios compare a bank's likely cash inflows (including those from realising the value of liquid assets) in a stressed situation with its likely cash outflows, expressing the difference as a percentage of total funding. A stronger mismatch ratio would indicate less vulnerability to changes in the performance of assets or the availability of funding.

The longer term funding profile of banks will be addressed by a minimum 'core funding ratio'. Such a ratio aims to ensure that banks' funding is not excessively concentrated in borrowing that is short term or at risk of not

Box E

Deposit and wholesale funding guarantee schemes

On October 12, the Prime Minister and Minister of Finance announced that the New Zealand Government would temporarily guarantee retail deposits in most New Zealand based financial institutions once an application from the institution was accepted.

While there had not been a significant number of retail deposit 'runs' from banks internationally, part of the response of governments around the world to the environment was to extend existing retail deposit guarantee schemes to help mitigate the potential risks of such an occurrence. Australia and New Zealand were unusual (within the OECD) in having no existing scheme and Australia announced that it was undertaking a guarantee around the same time as New Zealand. While the Australasian banks do not have the solvency issues that are affecting a number of major banks overseas, introducing a guarantee for New Zealand depositors was seen as a prudent step to ensure that depositors remain confident that their deposits are safe in an environment of extreme global risk aversion.

Both the Australian and New Zealand retail guarantee schemes are quite comprehensive. Under the New Zealand scheme, as well as bank deposits, the deposits of finance companies and other non-bank institutions are eligible for inclusion (subject to certain conditions that are designed to stop institutions that are in breach of their trust deed or in moratoria from gaining access). The scheme will end (unless reviewed and renewed) after two years.

The retail guarantee scheme includes a deposit coverage cap of $1 million per depositor per covered institution. For institutions with total retail deposits above $5 billion, a fee of 10 basis points per annum will be charged. This means that a bank with $20 billion in retail deposits would pay $15 million in fees per annum.

There are also fees for the new business component of registered banks and non-bank deposit-takers that are not already subject to a fee charge. These institutions whose covered liabilities are under $5 billion will be charged the following fees on the cumulative growth in their book since 12 October 2008 (although the first 10 percent per year in growth is not charged for):

- 10 basis points per annum to institutions rated AA minus and above;
- 20 basis points per annum to institutions rated A+, A and A minus;
- 50 basis points per annum to institutions rated BBB+, BBB and BBB minus;
- 100 basis points per annum to institutions rated BB+ and BB; and
- 300 basis points per annum to institutions rated below BB or that are unrated.

Growth will be measured, and charged for, monthly.

In early November, the Minister of Finance also announced the introduction of a wholesale guarantee facility. A similar scheme was announced in Australia in October alongside the retail guarantee. The wholesale guarantee facility is in response to the recent disruptions in wholesale funding markets which were discussed in chapters 3 and 4. The scheme is designed to allow financial institutions to return to international funding markets before they have fully normalised by giving them the ability to utilise a government guarantee to give full confidence to the investor.

Any paper carrying the guarantee will be covered for a maturity of up to five years from the time it is issued. A guarantee fee will be charged, differentiated by the risk of the issuer and the term of the security being guaranteed. For an AA rated borrower (which would include the four largest banks) the guarantee fee will be 140 basis points for debt with a maturity of one year or longer and 85 basis points for shorter terms. This is sufficiently penal that it compensates the Government for the risk being covered and gives the banks incentives to look for alternative funding sources. The scheme (and the fees payable) will be reviewed regularly and the scheme will be withdrawn when markets return to normal.

Further details of the guarantee facilities, and the institutions that have been accepted to date, are on the Treasury website (www.treasury.govt.nz).

Both the retail and wholesale guarantees are a temporary response to extraordinary conditions in financial markets, and are designed to provide confidence for depositors and creditors. New Zealand's move to provide them is, in large part, a reflection of the adoption of similar schemes in other countries. An inevitable downside of guarantees is that they create distortions within the broader financial system and can disadvantage some institutions and investors. These distortions arise largely because it is not practically possible to guarantee the debt of all classes of institution. For example, it may prove harder for some corporate or local government borrowers to issue debt securities to local investors given that these securities are not eligible for a government guarantee. Both the retail and wholesale guarantee schemes are being structured in a way that attempts to reduce these distortions as much as possible through the use of risk-based fees and other features. The moral hazard problem – where incentives are diminished for individual financial institutions to manage their own balance sheet risk prudently – is also an issue that will need to be carefully managed during the period of the guarantees.

being renewed in the event of stress. The core funding ratio compares a bank's core funding with total assets, indicating the proportion of the bank's business that is supported by reasonably stable borrowing. A higher core funding ratio would thus indicate that a bank was less vulnerable to fluctuations in investor confidence and market conditions.

The proposed qualitative rules set out the Reserve Bank's minimum expectations of how a bank must measure, monitor, control and manage its liquidity risk on a day-to-day basis. These rules identify the essential high-level principles that should underlie the organisational and accountability structure, the way in which analytical tools are incorporated in the internal management process, and the need to plan how to respond to situations of liquidity stress. While the proposed policy also sets out guidance on matters that should be considered when banks apply those principles, banks would have flexibility to apply the principles in ways best suiting their own business needs.

As already noted, disclosure of information to the public will play a primary role in bringing market discipline to bear on banks. Included in the information to be disclosed would be details of a bank's performance under the mismatch requirements and core-funding ratio requirement. Such disclosure would provide a strong incentive to ensure prudent management of liquidity risk over both short and longer horizons.

At the same time, the proposal is for banks to report monthly to the Reserve Bank on a limited set of indicators of liquidity risk and performance against the policy's quantitative requirements. In normal times this would not require any supervisory response, but would provide scope for further supervisory discussions if the reports raised any concerns. The information collected would be somewhat more frequent and timely than that disclosed publicly, but its content would be a subset of what banks disclose publicly each quarter.

The consultation paper is on the Reserve Bank's website, and the period for submissions will close on 31 December 2008. After the consultation period, and having made any appropriate amendments to the policy in light of submissions and further analysis, we aim to finalise policy and issue new conditions of registration for banks by around March 2009.

Banks are likely to need a period of time to achieve compliance with some of the policy. Upon issuing the policy, the Reserve Bank will begin discussions with individual banks about a 'path to compliance' that might be required. Any such path to compliance would be underpinned by conditions of registration that would require the bank to meet the target date for full compliance, as well as any interim milestones.

6.2 Basel II

On 30 June 2008 the Reserve Bank announced that the Bank of New Zealand (BNZ) had been accredited to adopt the internal models approach for credit risk under the Basel II banking supervisory regime from the third quarter of 2008. The BNZ was accredited to use internal models for operational risk in December 2007. The four largest New Zealand banks are now accredited to use internal models for

credit and operational risk as the basis for calculating their minimum regulatory capital requirements under Basel II.

6.3 Reserve Bank of New Zealand Amendment Act/NBDT regulation

In September 2008, the Reserve Bank of New Zealand Amendment Act was passed. The main changes to the Act include a new section (Part 5D) relating to the Reserve Bank's new responsibility as the prudential regulator of non-bank deposit takers.[1] The Act defines non-bank deposit takers (NBDTs) as organisations that offer debt securities to the public and that are in the business of lending money or providing other financial services. NBDTs (and other entities that are captured by the definition) can apply for an exemption from all or part of the prudential regime.

Broadly speaking, the prudential regime for NBDTs will be conceptually similar to the regime under which registered banks currently operate, but will need to be calibrated to suit the sector. Table 6.1 outlines the key elements of the regime.

Given ongoing volatility in the non-bank sector, and against the backdrop of the government's Deposit Guarantee Scheme, the Reserve Bank has elected to bring forward the capital and related party lending aspects of the prudential regime, as documented in table 6.1. The Bank expects to begin consulting with industry on draft regulations towards the end of 2008 with a view to having regulations in place shortly thereafter. Regulation on some matters and guidelines in the other areas are expected to

Table 6.1
Key elements of the prudential regulatory regime for non-bank deposit takers

a) **Capital adequacy.** NBDTs will be required to hold a minimum dollar amount of capital and comply with a minimum capital ratio. The precise nature of capital used to meet these requirements and the framework for calculating the capital ratio will be defined by regulation.
b) **Liquidity requirements.** NBDTs will be required to meet certain requirements to restrict the degree to which they have the ability to 'borrow short and lend long'. Liquidity requirements will be based on the prudential liquidity regime that will be established for banks.
c) **Related party lending.** NBDTs must adhere to limits concerning their degree of exposure to related parties. The limit on exposure to related parties will be relative to the capital of the NBDT, and will be defined by regulation.
d) **Governance.** NBDTs will be required to have at least two independent directors and a non-executive chairperson, to help ensure that the interests of depositors are represented at the governance level.
e) **Risk management.** NBDTs are required to have and comply with a risk management programme with effect from 1 September 2009. The risk management programme sets out how the institution will identify and manage its key risks, such as credit and liquidity risk. The risk management plan will need to be submitted to and approved by the deposit taker's trustee.
f) **Credit rating requirements.** NBDTs above a minimum scale threshold are required to obtain a credit rating from a credit rating agency (approved by the Reserve Bank), with effect from 1 March 2010. The exemption threshold below which NBDTs are not required to obtain a rating will be determined by the first quarter of 2009.

[1] The Amendment Act also introduced some refinements to the governance and accountability of the Reserve Bank, and a number of minor technical adjustments.

follow throughout 2009, with the regime fully in place by the end of 2010.

While the Reserve Bank is responsible for the design of the regulatory regime, it will not directly supervise the compliance of NBDTs with the regime. Trustee companies will be responsible for assessing the compliance of NBDTs with all applicable prudential regulations. NBDTs will have to engage a trustee for this purpose. The Reserve Bank will have the ability to require additional reports from an NBDT, in certain circumstances. All such prudential information in respect of NBDTs which is not otherwise publicly disclosed will be strictly confidential.

6.4 Insurance

The Reserve Bank will be the prudential regulator and supervisor of the insurance sector, with the objective of the prudential requirements being to encourage the maintenance of a sound and efficient insurance sector that promotes policyholder confidence. Following a period of industry consultation, in August 2008 Cabinet approved a number of further aspects of the prudential framework including:

a) **Separation of insurance business lines.** All life insurers operating in New Zealand will be required to establish at least one life insurance statutory fund to legally separate and better protect life insurance policyholder interests.

b) **Treatment of foreign-owned branches.** Foreign-owned insurers can operate as branches in New Zealand, provided that all licensing, monitoring and other prudential requirements are met. This includes home country regulation, supervision, legal and accounting practices being to standards acceptable to the Reserve Bank. New Zealand branches must also obtain and publish a financial strength rating from a rating agency approved by the Reserve Bank that takes into account any home country policyholder preference arrangements or other legal issues which could disadvantage New Zealand policyholders.

c) **Distress Management.** In situations of insurer distress the Reserve Bank will utilise, as appropriate to the severity of each circumstance, a range of legal processes to manage corporate distress. The Reserve Bank will have the power to apply to the court to put a distressed insurer into either voluntary administration or liquidation under the Companies Act if this is appropriate. The Reserve Bank will also have the power to place a distressed insurer under statutory management. The threshold for the application of statutory management will be set at an appropriately high level and the agreement of the Minister of Finance will be required.

d) **Business structure.** Rules will limit connected party exposure and non-insurance activities by insurers. There will be a requirement for Reserve Bank approval of any transaction which changes the ownership of policyholder liabilities.

These decisions by Cabinet finalise the overall architecture of the insurance prudential framework and further details are on the Reserve Bank's website. Legislation to give effect to all of the insurance prudential requirements is expected to be introduced in 2009 and brought into force during 2010.

Graphical appendix[1]

International

Figure A1a

Real GDP growth

(annual average percent change)

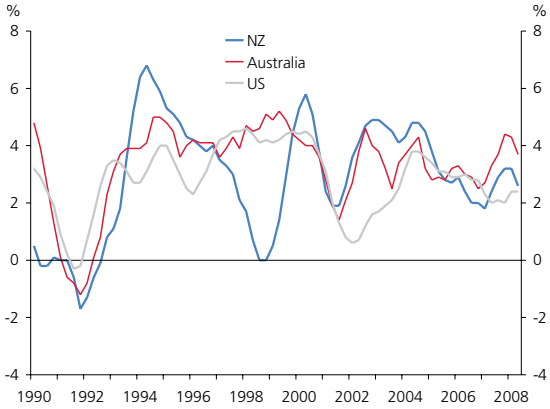


Figure A1b

Real GDP growth

(annual average percent change)

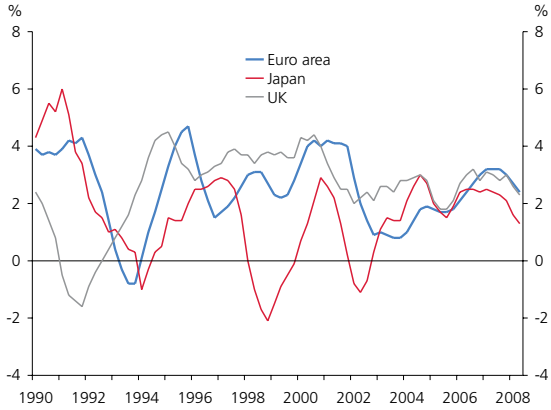


Figure A2a

Current account balance

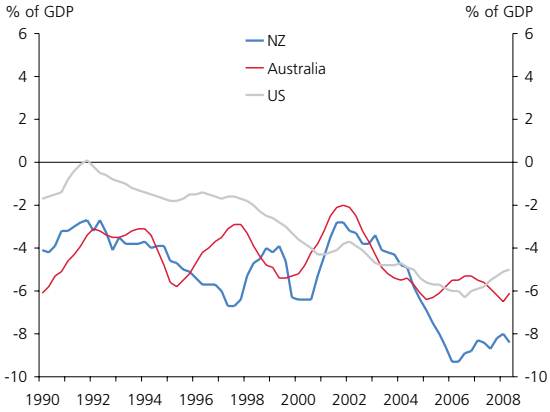


Figure A2b

Current account balance

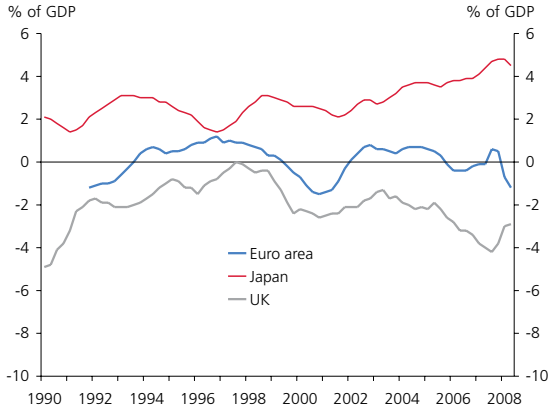


Figure A3

Trade-weighted exchange rate indices

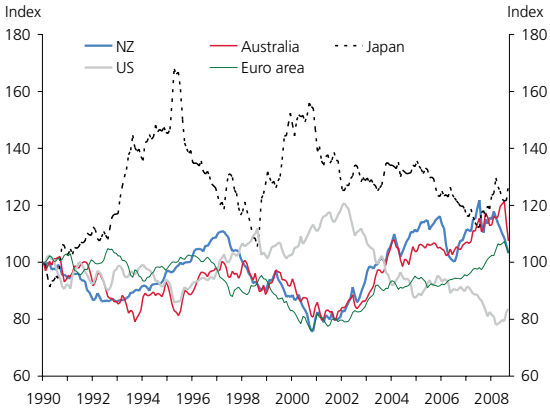
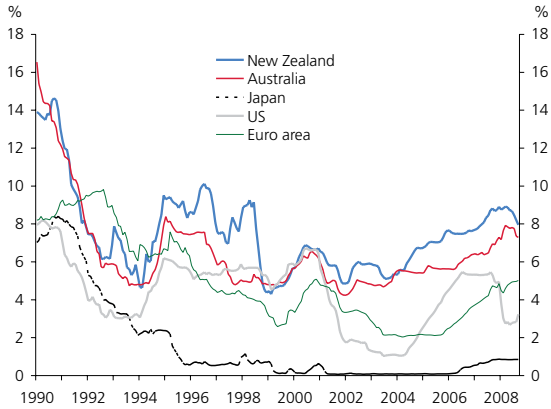


Figure A4

Short-term interest rates



[1] The data contained in this appendix was finalised on 24 October 2008, with the exception of table A4. Definitions and sources are listed on pages 51-52.

Asset prices

Figure A5

Equity market indices

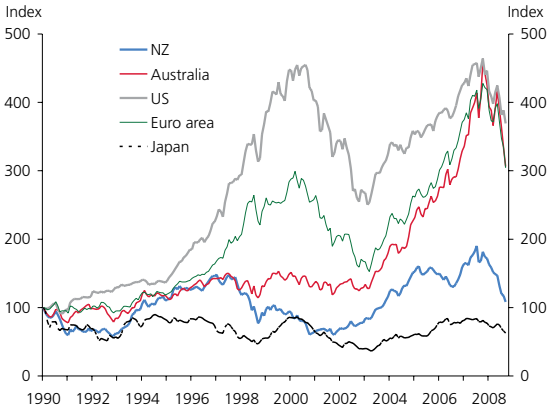
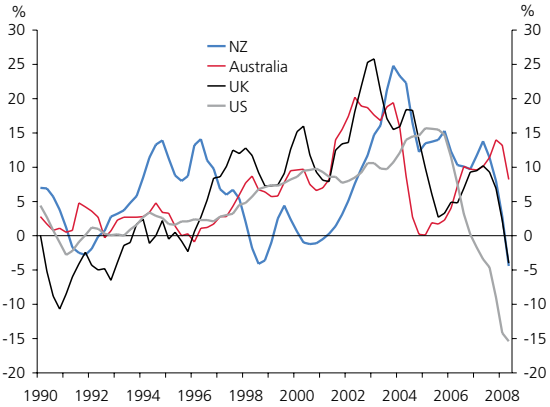


Figure A6

House price inflation

(annual percent change)



New Zealand

Figure A7

Household debt and servicing costs

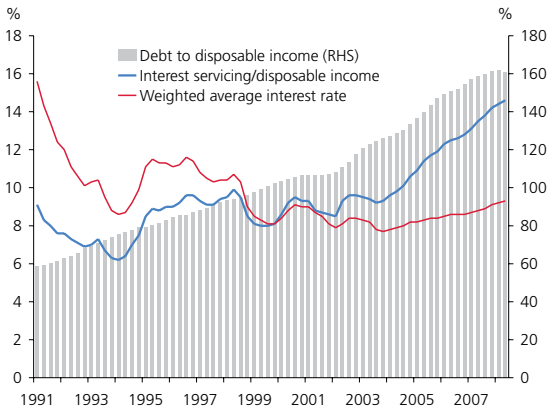


Figure A8

Household assets and liabilities

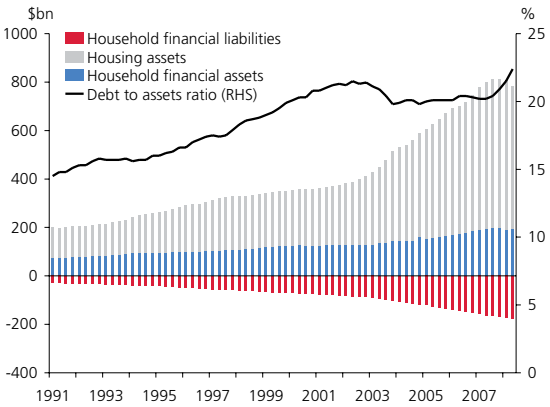


Figure A9

Property price inflation

(annual percent change)

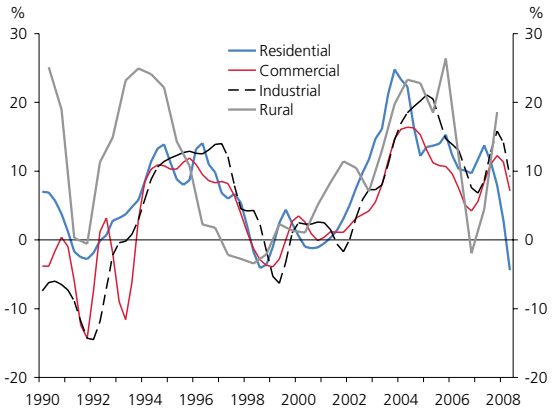
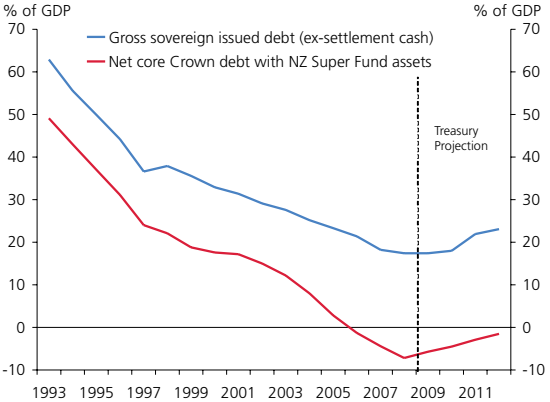


Figure A10

Government debt



New Zealand financial markets

Figure A11

Government bonds on issue and turnover

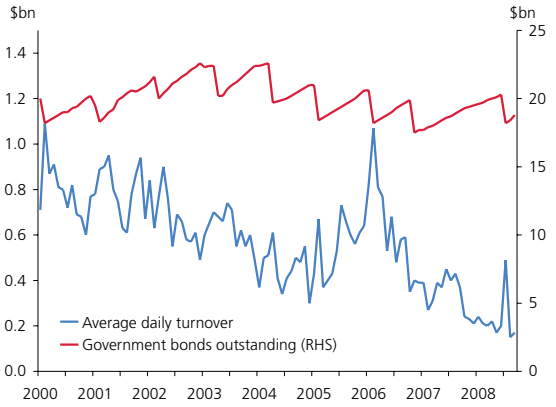


Figure A12

Ten-year government bond spreads

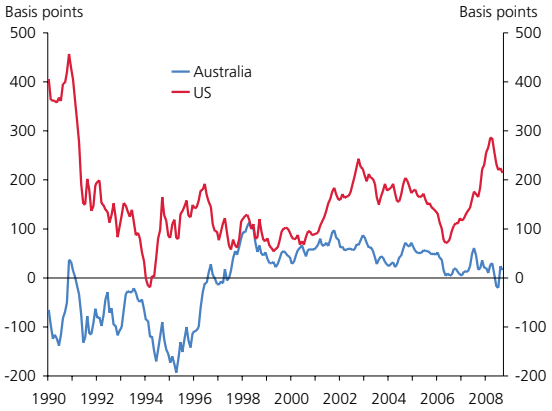


Figure A13

Yields on New Zealand government securities

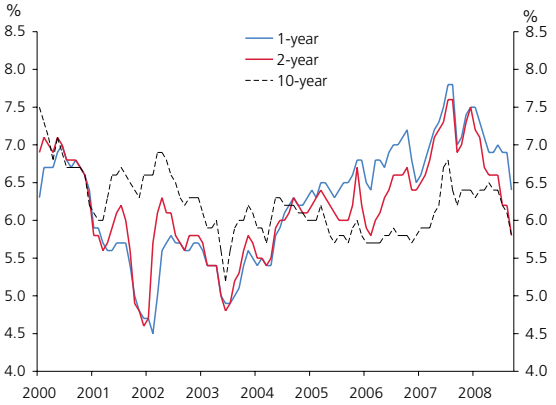


Figure A14

Non-resident holdings of New Zealand government securities

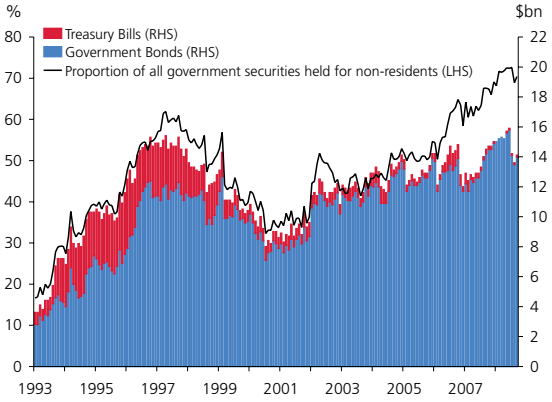


Figure A15

NZD/USD turnover in domestic markets

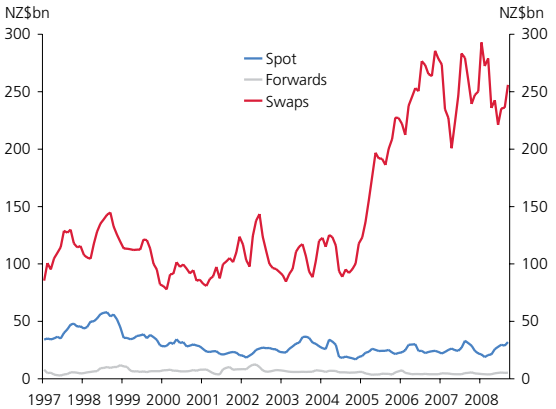


Figure A16

NZD/USD and implied volatility

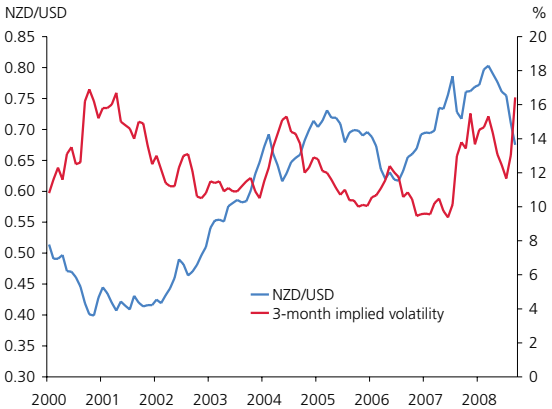


Figure A17

Effective mortgage rate and the OCR

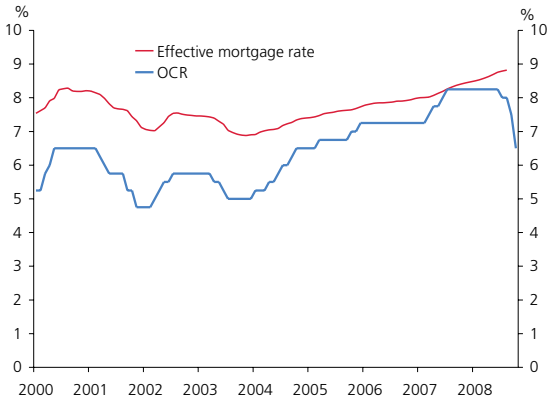


Figure A18

Equity market capitalisation to GDP

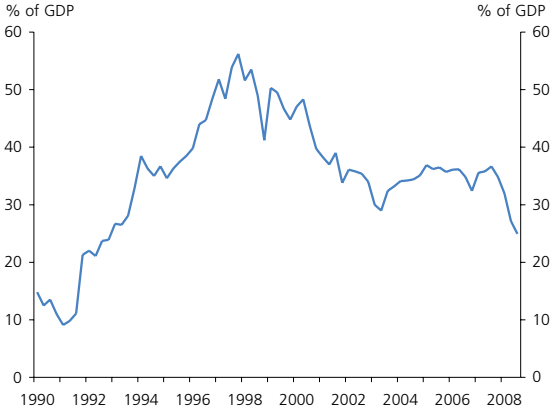
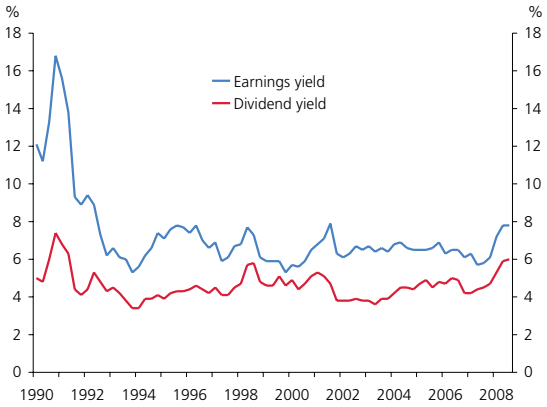


Figure A19

Earnings and dividend yields



Banking sector indicators

Figure A20

Capital adequacy ratios

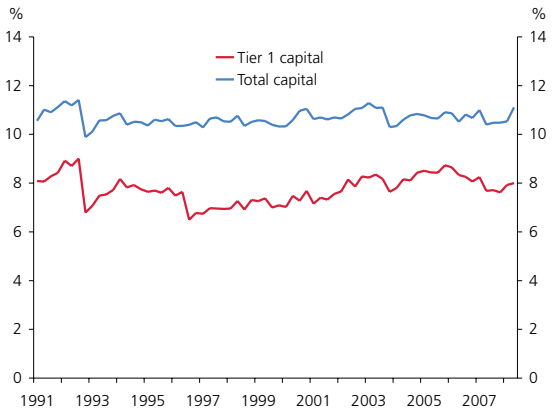


Figure A21

Asset impairment

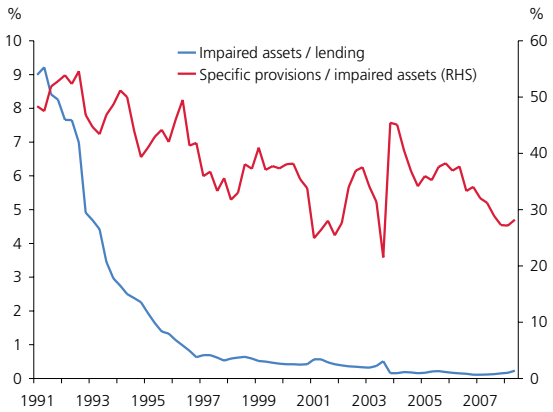


Figure A22

Return on assets

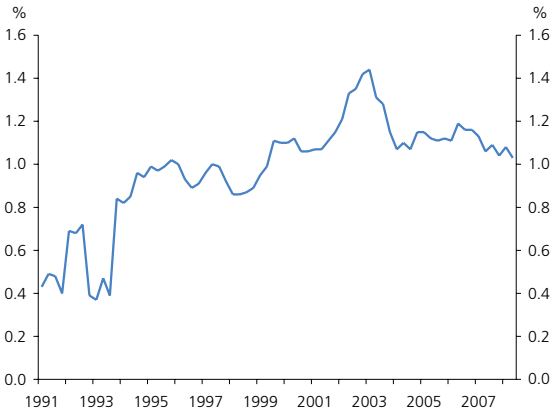


Figure A23

Operating costs to income

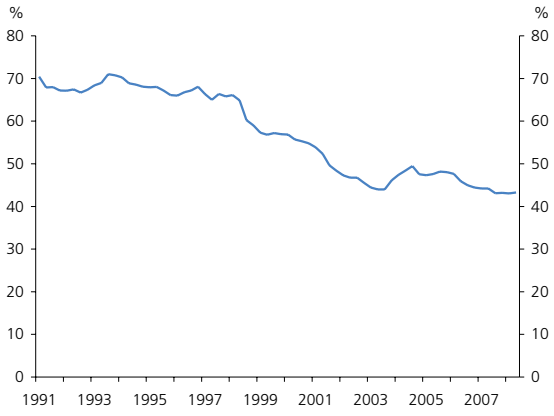


Figure A24

Interest margin

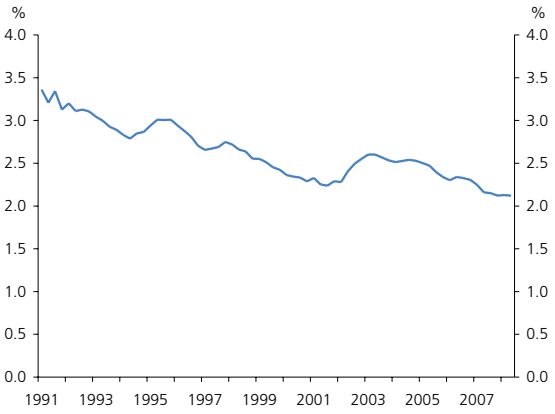


Figure A25

Registered bank offshore funding

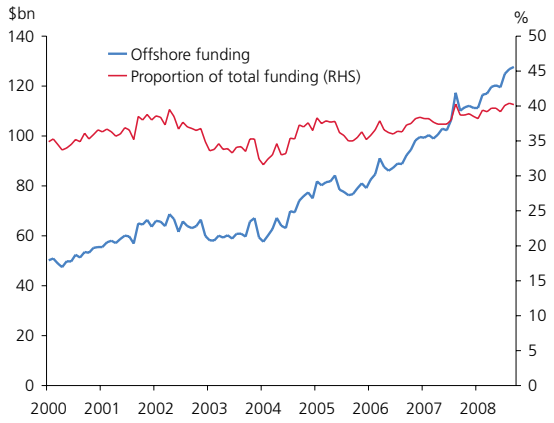


Figure A26

Bank asset composition

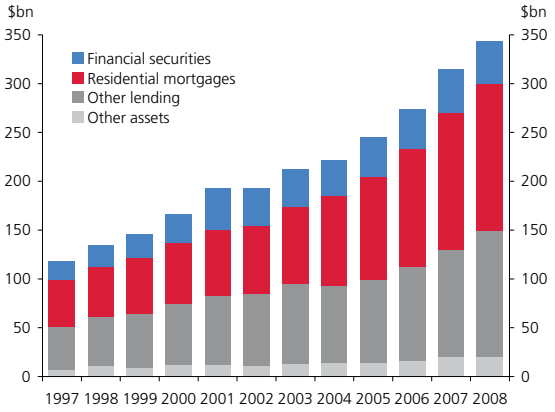


Figure A27

Bank funding composition

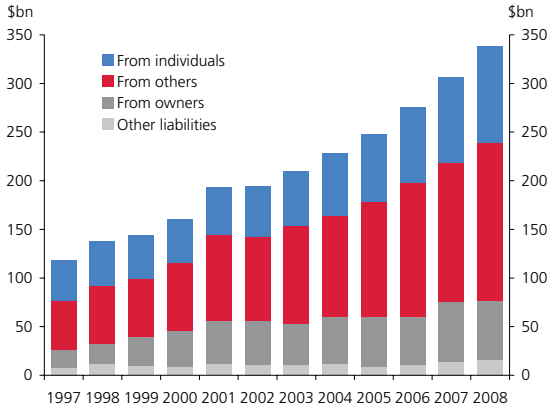


Figure A28

Bank asset growth

(annual percent change)

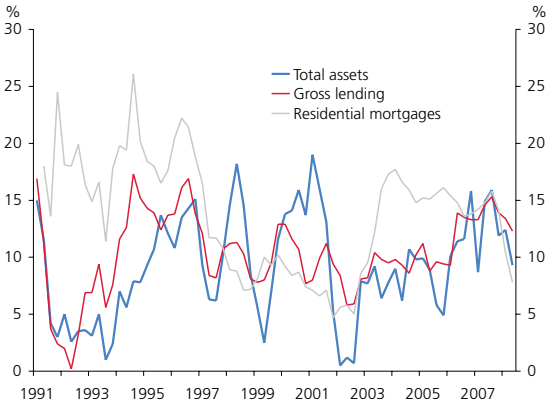


Figure A29

Bank market share

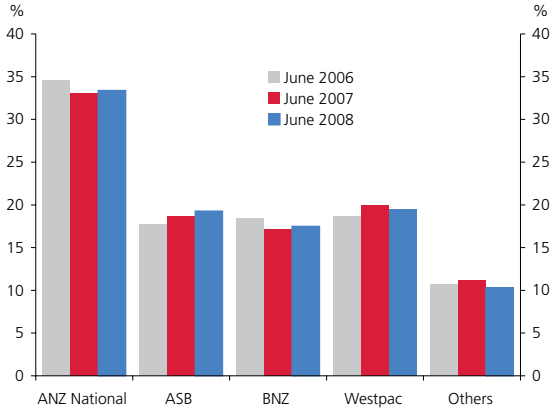


Figure A30

Bank-wide capital adequacy ratios

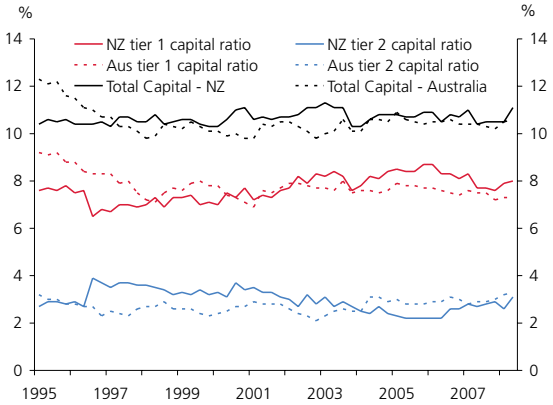


Figure A31

Large bank operating expenses to average assets

Non-bank lending institutions

Figure A32

NBLI asset composition

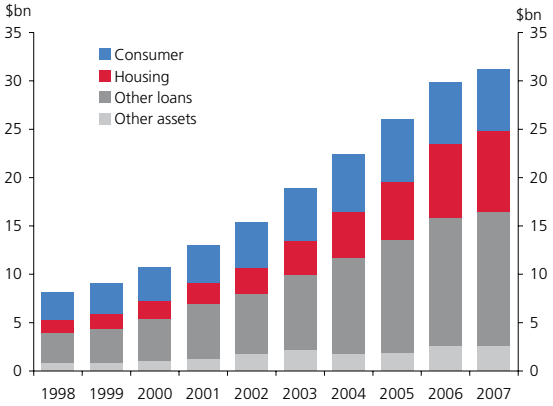
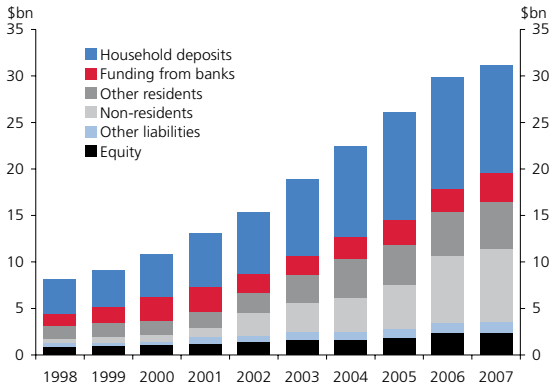


Figure A33

NBLI funding composition



New Zealand financial system assets and liabilities

Table A1

Financial system liabilities

As at 31 December ($bn)	1990	1995	2000	2005	2006	2007	June 2008
Banks							
Households	24	32	41	61	70	79	83
Other residents	29	35	55	84	90	98	102
Non-residents	11	22	56	85	96	111	120
Other liabilities	14	14	28	24	39	41	39
Total	78	103	180	254	294	329	344
Non-bank lending institutions							
Households	2	3	4	12	12	12	11
Other residents	3	2	4	7	7	8	8
Other funding and liabilities	1	1	2	8	11	11	11
Total	6	6	10	26	30	31	30
Funds under management							
Household assets	25	41	56	57	65	66	60
Other sector assets	2	1	4	6	7	8	7
Total	27	42	60	64	72	74	67
Total financial system liabilities	111	151	250	344	396	434	441

Table A2

Financial system assets

As at 31 December ($bn)	1990	1995	2000	2005	2006	2007	June 2008
Banks							
Households	20	42	66	119	135	153	158
Other residents	36	45	72	101	113	128	137
General government	8	6	7	6	3	4	4
Non-residents	2	2	17	12	14	15	14
Other assets	12	8	18	15	29	30	31
Total	78	103	180	254	294	329	344
Non-bank lending institutions							
Households	2	3	5	12	14	15	14
Other residents	3	2	4	12	13	14	13
Other assets	1	1	1	2	3	3	3
Total	6	6	10	26	30	31	30
Funds under management							
Domestic fixed interest	..	..	27	25	27	27	27
Domestic equities	..	..	7	9	10	10	7
Other domestic assets	..	..	4	4	5	5	5
Overseas investments	..	..	22	26	30	31	27
Total	27	42	60	64	72	74	67
Total financial system assets	111	151	250	344	396	434	441

Notes apply to tables A1 and A2. Totals and sub-totals may not add due to rounding.
Source: RBNZ surveys and registered banks' GDS.
Note: Figures for non-bank lending institutions incorporate securitised assets. Counterpart funding is included in 'other residents' for NBLIs. For these institutions, securitised assets represent over 11 percent of total assets in 2007. For registered banks in 2007, securitised assets represent less than 0.5 percent of the total of GDS assets reported. General insurance liabilities and assets are not included. Funds under management and non-bank lending institution data has been revised from 2005.

Table A3

New Zealand-registered banks as at 30 June 2008

Registered bank's name	Market share[1]	Credit ratings			Ultimate parent	Country of parent
		S&P	Moody's	Fitch		
ABN AMRO Bank NV (B)	0.4	AA-	Aa2	AA-	Royal Bank of Scotland Group PLC	UK
ANZ National Bank Limited	33.4	AA	Aa2	AA-	Australia and New Zealand Banking Group Limited	Australia
Commonwealth Bank of Australia (B)	2.0	AA	Aa1	AA	Commonwealth Bank of Australia	Australia
ASB Bank Limited	17.3	AA	Aa2	-	Commonwealth Bank of Australia	Australia
Bank of New Zealand	17.5	AA	Aa2	-	National Australia Bank	Australia
Citibank N A (B)	1.3	AA	Aa1	AA-	Citigroup Inc.	USA
Deutsche Bank Aktiengesellschaft (B)	1.3	AA-	Aa1	AA-	Deutsche Bank Aktiengesellschaft	Germany
JPMorgan Chase Bank, N.A. (B)	0.0	AA	Aaa	AA-	JPMorgan Chase & Co	USA
Kiwibank Limited	2.1	AA-	-	-	New Zealand Post Limited	New Zealand
Kookmin Bank (B)	0.1	A	A2	-	Kookmin Bank	South Korea
Rabobank Nederland (B)	0.6	AAA	Aaa	-	Rabobank Nederland	Netherlands
Rabobank New Zealand Limited	1.5	AAA	-	-	Rabobank Nederland	Netherlands
Southland Building Society[2]	-	-	-	BBB	Southland Building Society	New Zealand
The Bank of Tokyo-Mitsubishi, Ltd (B)	0.2	A+	Aa2	-	Mitsubishi UFJ Financial Group Inc.	Japan
The Hongkong and Shanghai Banking Corporation Limited (B)	1.9	AA	Aa1	AA	HSBC Holdings PLC	UK
TSB Bank Limited	1.0	BBB+	-	-	TSB Community Trust	New Zealand
Westpac Banking Corporation (B)	4.6	AA	Aa1	AA-	Westpac Banking Corporation	Australia
Westpac New Zealand Limited	14.8	AA	Aa2	-	Westpac Banking Corporation	Australia

[1] **Registered bank's assets as a proportion of the total assets of the banking system, as at 30 June 2008. It does not include the total assets of Southland Building Society**

[2] **Southland Building Society was registered on 7 October 2008.**

Note: Banks marked (B) operate in New Zealand as branches of overseas incorporated banks. All other banks are incorporated in New Zealand.

Table A4

Selected non-bank lending institutions' (NBLI) assets and liabilities

	Non-deposit-taking finance companies			Deposit-taking finance companies			Savings institutions			Total NBLIs		
	$m Jun-07	$m Jun-08	Growth[1] % pa	$m Jun-07	$m Jun-08	Growth[1] % pa	$m Jun-07	$m Jun-08	Growth[1] % pa	$m Jun-07	$m Jun-08	Growth[1] % pa
NZD Funding												
NZ resident households	0	0	..	7125	5641	-21%	3985	4375	10%	11110	10016	-10%
Other funding[2]	3333	3070	-8%	3173	3730	18%	442	617	40%	6948	7417	7%
Non-residents	6360	6452	1%	320	307	-4%	111	151	36%	6791	6910	2%
Total NZD funding	9693	9522	-2%	10618	9678	-9%	4538	5143	13%	24849	24343	-2%
Foreign currency funding	179	250	40%	298	382	28%	0	0	..	477	632	32%
Other liabilities	634	721	14%	219	229	5%	82	93	13%	935	1043	12%
Capital and reserves	486	500	3%	1215	1165	-4%	389	472	21%	2090	2137	2%
Total Liabilities	10992	10993	0%	12350	11454	-7%	5009	5708	14%	28351	28155	-1%
NZD lending to residents												
Farm lending	101	113	12%	735	898	22%	498	509	2%	1334	1520	14%
Business lending	2355	2674	14%	6114	5249	-14%	781	826	6%	9250	8749	-5%
Housing lending	3787	3377	-11%	1068	1135	6%	2956	3285	11%	7811	7797	0%
Consumer lending	3090	3197	3%	1903	1736	-9%	278	467	68%	5271	5400	2%
Total NZD loans by sector	9333	9361	0%	9820	9018	-8%	4513	5087	13%	23666	23466	-1%
Foreign currency loans	3	7	..	639	605	-5%	-	-	..	642	612	-5%
All other loans and assets[3,4]	1656	1625	-2%	1891	1831	-3%	496	621	25%	4043	4077	1%
Total assets	10992	10993	0%	12350	11454	-7%	5009	5708	14%	28351	28155	-1%
Memo item: Lending to non-residents	8	0	-100%	887	881	-1%	- 4	- 4	..	899	885	-2%

Source: RBNZ – NBLI SSR. Includes NBLIs with total assets (including securitised lending) exceeding $100m at relevant dates. Totals may not add due to rounding.

Notes:

1 **Percentage growth calculations are affected by entry of new respondents to the NBLI survey and recategorisation of assets and liabilities among NBLI groups.**

2 **Including output funding to securitised loans.**

3 **Includes, inter alia, claims on banks and NZD non-resident lending. Savings institutions include building societies and credit unions with assets exceeding $100m at relevant dates, and PSIS Limited.**

4 **Asset values in the SSR for firms in receivership may not be updated to fully reflect market conditions (e.g. recovery estimates will largely not be reflected in recorded value). In this sense, given recent events, the survey is currently likely to understate the rate at which the non-bank sector is shrinking.**

Notes to the graphical appendix

The appendix contains a suite of charts that appear regularly in the *Financial Stability Report*. They provide an overview of developments in a set of key economic and financial indicators. Definitions and sources (in italics) are noted below. The data for the charts in this *Report*, including those in the graphical appendix, are available on the Reserve Bank website.

1	Real GDP growth	Annual average percentage change in real GDP. *Datastream*.
2	Current account balance	Current account balance as a percentage of GDP, four-quarter total. *Datastream*.
3	Trade-weighted exchange rate indices	Trade-weighted indices, January 1990 = 100. *Bank of England*.
4	Short-term interest rates	Yields on 90-day bank bills. *Reuters*.
5	Equity market indices	Morgan Stanley Capital Indices, January 1990 = 100. *Datastream*.
6	House price inflation	Annual percentage change in national house price indices. *Datastream*, *Quotable Value Ltd.*
7	Household debt and servicing costs	Household debt excludes student loans. Household disposable income is gross before deduction of interest paid and consumption of fixed capital, and is interpolated from March-year data from *Statistics New Zealand*, with *RBNZ* forecasts. The weighted average interest rate is obtained from *SSR* data for residential mortgages and RBNZ calculations for consumer interest rates.
8	Household assets and liabilities	Housing assets are the aggregate private sector residential dwelling value. Data is from *Quotable Value Ltd* from 1995, with *RBNZ* estimates based on the House Price Index for prior years. Household financial assets are as published annually by *RBNZ*, with aggregate quarterly figures interpolated prior to 1995, based on component estimates from then. Household liabilities are from *RBNZ* series as for figure A7.
9	Property price inflation	Annual percentage change in property price indices. Commercial and industrial property prices are interpolated from semi-annual figures. *Quotable Value Ltd.*
10	Government debt	Net core Crown debt is debt attributable to core Crown activities and excludes Crown entities and state-owned enterprises. *The Treasury*.
11	Government bonds on issue and turnover	Total government securities on issue (D1) and New Zealand government bond turnover survey (D9). *RBNZ.*
12	Ten-year government bond spreads	Yield on 10-year benchmark New Zealand government bonds, less yield on US and Australian equivalents. *RBNZ*.
13	Yields on New Zealand government securities	*Reuters*, *RBNZ*.
14	Non-resident holdings of New Zealand government securities	*RBNZ*.
15	NZD/USD turnover in domestic markets	*RBNZ survey.* Three month moving average of the monthly totals.
16	NZD/USD and implied volatility	Standard deviation used to price three-month NZD/USD options. *UBS*, *RBNZ*.
17	Effective mortgage rate and the OCR	*RBNZ*.
18	Equity market capitalisation to GDP	Total market capitalisation of firms listed on New Zealand Stock Exchange, as a percentage of annual nominal GDP. *Datastream*. Latest GDP value is estimated.

19	Earnings and dividend yields	Earnings and dividends as a percentage of total market capitalisation. *First New Zealand Capital*.
20	Capital adequacy ratios	Tier 1 and Tier 2 capital as a percentage of risk-weighted assets for all locally incorporated banks. Registered banks' *General Disclosure Statements* (*GDS*).
21	Asset impairment	Impaired assets as a percentage of total lending; specific provisions as a percentage of impaired assets; for all registered banks. *GDS*.
22	Return on assets	Net profits after tax and extraordinary items, as a percentage of average total assets, four-quarter average, for all registered banks. *GDS*.
23	Operating costs to income	Operating expenses as a percentage of total income, four-quarter average, for all registered banks. *GDS*.
24	Interest margin	Net interest income as a percentage of average interest-earning assets, four-quarter average, for all registered banks. *GDS*.
25	Registered bank offshore funding	*RBNZ*.
26	Bank asset composition	As at 30 June 2008. *GDS*.
27	Bank funding composition	As at either 31 March or 30 June. *GDS*.
28	Bank asset growth	Year-on-year change in total assets of all registered banks. Gross lending is before provisions. *GDS*.
29	Bank market share	Bank assets as a percentage of total assets of registered banks. *GDS*.
30	Bank-wide capital adequacy ratios	Capital is a percentage of risk-weighted assets for all locally incorporated banks. *GDS, Reserve Bank of Australia*.
31	Large bank operating expenses to average assets	Includes four largest banks in Australia and New Zealand. Excludes interest costs. As at the applicable annual bank balance dates. *GDS*.
32	NBLI asset composition	*RBNZ Annual Statistical Return* and *NBFI SSR* as at 31 December.
33	NBLI funding composition	*RBNZ Annual Statistical Return* and *NBFI SSR* as at 31 December.